STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 187604

TO:	From:
Ralph J Gitomer Location: 3d65 / 3c18 Tuesday, May 30, 2006 Art Unit: 1655 Phone: 571-272-0916 Serial Number: 10 / 782290	Jan Delaval Location: Biotech-Chem Library Remsen 1a51 Phone: 571-272-2504 jan.delaval@uspto.gov

Search Notes

Search and Information Resources Administration

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=> fil reg
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STRUCTURE FILE UPDATES:   28 MAY 2006  HIGHEST RN 885861-83-6
DICTIONARY FILE UPDATES:  28 MAY 2006  HIGHEST RN 885861-83-6

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*********************************************************************
*                                                                   *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
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* available and contains the CA role and document type information. *
*                                                                   *
*********************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
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experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d ide can tot l1

L1   ANSWER 1 OF 3  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   58367-01-4  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Glucose (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   (±)-Glucose
CN   dl-Glucose
FS   STEREOSEARCH
DR   111688-73-4
MF   C6 H12 O6
CI   COM
LC   STN Files:   ADISNEWS, AGRICOLA, BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT,
       CHEMLIST, CIN, IMSCOSEARCH, MEDLINE, PIRA, PROMT, TOXCENTER, TULSA,
       USPAT2, USPATFULL
         (*File contains numerically searchable property data)

Relative stereochemistry.
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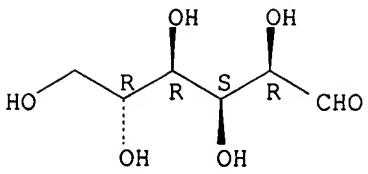


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

344 REFERENCES IN FILE CA (1907 TO DATE)
14 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
345 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:427215

REFERENCE 2: 144:418933

REFERENCE 3: 144:417879

REFERENCE 4: 144:408867

REFERENCE 5: 144:393202

REFERENCE 6: 144:390046

REFERENCE 7: 144:372837

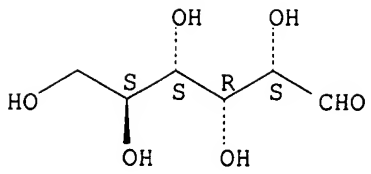
REFERENCE 8: 144:371562

REFERENCE 9: 144:357546

REFERENCE 10: 144:352599

L1 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 921-60-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Glucose (6CI, 7CI, 8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN L(-)-Glucose
CN **l-Glucose**
FS STEREOSEARCH
MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, GMELIN*, IPA, MSDS-OHS, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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13 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
848 REFERENCES IN FILE CAPLUS (1907 TO DATE)
8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 144:189775

REFERENCE 2: 144:88513

REFERENCE 3: 144:2510

REFERENCE 4: 143:478125

REFERENCE 5: 143:452803

REFERENCE 6: 143:418866

REFERENCE 7: 143:401454

REFERENCE 8: 143:362518

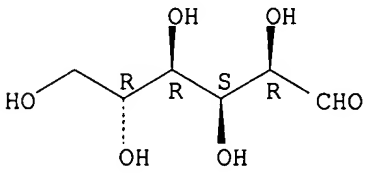
REFERENCE 9: 143:360821

REFERENCE 10: 143:324907

L1 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2006 ACS on STN
RN 50-99-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN **D-Glucose (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN (+)-Glucose
CN Anhydrous dextrose
CN Cartose
CN Cerelose
CN Cerelose 2001
CN Clearsweet 95
CN Clintose L
CN Corn sugar
CN CPC hydrate
CN D(+)-Glucose
CN Dextropur
CN Dextrose
CN Dextrosol
CN Glucodin
CN Glucolin
CN **Glucose**
CN Glucosteril
CN Goldsugar

CN Grape sugar
CN Maxim Energy Gel
CN Meritose
CN Meritose 200
CN Roferose ST
CN Staleydex 111
CN Staleydex 130
CN Staleydex 333
CN Staleydex 95M
CN Sugar, grape
CN Tabfine 097(HS)
CN Vadex
FS STEREOSEARCH
DR 8012-24-6, 8030-23-7, 162222-91-5, 165659-51-8, 50933-92-1, 80206-31-1
MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

188774 REFERENCES IN FILE CA (1907 TO DATE)
2629 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
189062 REFERENCES IN FILE CAPLUS (1907 TO DATE)
14 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 144:444611

REFERENCE 2: 144:444383

REFERENCE 3: 144:442725

REFERENCE 4: 144:442569

REFERENCE 5: 144:440685

REFERENCE 6: 144:440246

REFERENCE 7: 144:440236

REFERENCE 8: 144:440167

REFERENCE 9: 144:440081

REFERENCE 10: 144:440072

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 08:13:11 ON 30 MAY 2006
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FILE COVERS 1907 - 30 May 2006 VOL 144 ISS 23
FILE LAST UPDATED: 28 May 2006 (20060528/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l88 bib abs hitstr retable tot

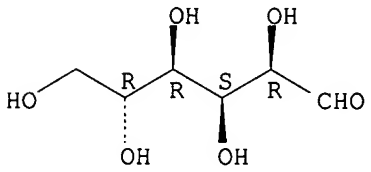
L88 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:217147 HCAPLUS
DN 144:249956
TI Blood contacting sensor coupled with a venous flow device
IN Van Antwerp, Nannette M.; Enegren, Bradley J.; Mastrototaro, John J.; Shah, Rajiv; **Hoss, Udo**; Zhang, Yanan; Wang, Jenn-Hann; Clark, Kent L.
PA USA
SO U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2006052745	A1	20060309	US 2004-935954	20040908
	WO 2006029293	A1	20060316	WO 2005-US32102	20050908

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM
PRAI US 2004-935954 A 20040908
AB The invention provides methods and apparatus for detecting an analyte in blood. The apparatus is particularly suited for bringing a sensor into direct contact with blood in vivo. The apparatus comprises a sensor that detects the presence of an analyte and an assembly means. The assembly means has a sensor end, wherein the sensor end of the assembly means is affixed to the sensor, and the assembly means is adapted for coupling with a venous flow device. By coupling with a venous flow device, the assembly means brings the sensor into direct contact with blood flowing through the venous flow device. Examples of venous flow devices that bring the sensor into direct contact with the blood of a subject include, but are not limited to, i.v. catheters and external blood loops, such as are used in extra corporeal membrane oxygenation or **hemodialysis**.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(blood contacting sensor coupled with a venous flow device)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



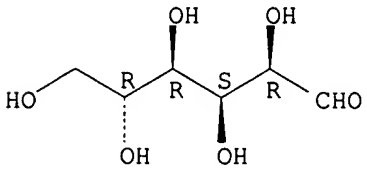
L88 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1293725 HCAPLUS
DN 144:42303
TI Analyte sensors and methods for making and using them
IN Shah, Rajiv; Reghabi, Bahar; Gottlieb, Rebecca K.; **Hoss, Udo**; Mastrototaro, John J.
PA Medtronic Minimed, Inc., USA
SO U.S. Pat. Appl. Publ., 34 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005272989	A1	20051208	US 2004-861837	20040604
WO 2005121355	A1	20051222	WO 2005-US17885	20050520

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2004-861837 A 20040604
AB Embodiments of the invention provide analyte sensors having stabilized coating compns. and methods for making and using such sensors. Illustrative embodiments include electrochem. **glucose** sensors having stabilized **glucose** oxidase coatings.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(electrochem. sensors for)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L88 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:331445 HCAPLUS
DN 140:300092
TI Analyte sensors and methods for making them
IN Holker, James D.; Mastrototaro, John J.; Noronha, Glenn; Shah, Rajiv; Zhang, Yanan; **Hoss, Udo**; Branch, Kevin D.
PA USA
SO U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004074785	A1	20040422	US 2002-273767	20021018
	CA 2502277	AA	20040429	CA 2003-2502277	20031017
	WO 2004036183	A2	20040429	WO 2003-US33065	20031017
	WO 2004036183	C1	20040701		
	WO 2004036183	A3	20050324		
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2003286473	A1	20040504	AU 2003-286473	20031017
	EP 1554567	A2	20050720	EP 2003-777673	20031017
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2006502810	T2	20060126	JP 2004-545498	20031017
PRAI	US 2002-273767	A	20021018		
	WO 2003-US33065	W	20031017		

AB Embodiments of the invention provide analyte sensors having stabilized coating compns. and methods for making such sensors. Illustrative

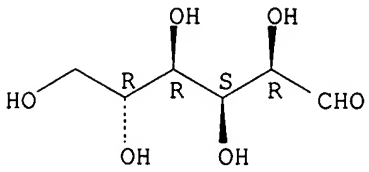
embodiments include electrochem. **glucose** sensors having stabilized **glucose** oxidase coatings that are generated for example, via spin coating processes.

IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(analyte sensors and methods for making them)

RN 50-99-7 HCAPLUS

CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L88 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:576395 HCAPLUS

DN 136:74407

TI Recent advances in continuous **glucose** monitoring

AU Freckmann, G.; Kalatz, B.; Pfeiffer, B.; **Hoss, U.**; Haug, C.

CS Institute for Diabetes-Technology at the University of Ulm, Ulm, Germany

SO Experimental and Clinical Endocrinology & Diabetes (2001), 109(Suppl. 2), S347-S357
CODEN: ECEDFQ; ISSN: 0947-7349

PB Johann Ambrosius Barth

DT Journal; General Review

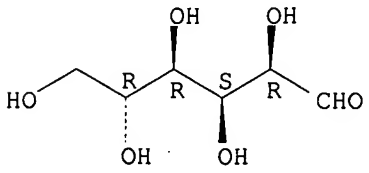
LA English

AB A review. Continuous **glucose** monitoring, providing more detailed information on **glucose** excursions than single spot measurements, should help to improve the therapy in diabetic patients and is also required for feedback-controlled insulin delivery. At the Institute for Diabetes-Technol. in Ulm, founded by EF Pfeiffer, a portable **glucose** sensor for continuous tissue **glucose** monitoring has been developed. The combination of **microdialysis** and enzymic amperometric **glucose** measurement implemented in this device marked a break-through in achieving reliable and precise continuous tissue **glucose** monitoring. In several studies, we have demonstrated that continuous s.c. **glucose** monitoring for up to 72 h is feasible under "inhouse" and "daily life" conditions in diabetic patients. The measured tissue **glucose** concns. correlated closely to **glucose** control measurements in venous and capillary blood. A reliable continuous **glucose** monitoring device is a prerequisite for the development of an artificial pancreas. Our group developed an algorithm for s.c. application of the fast acting insulin analogon lispro. In expts. performed over 7 and 24 h good metabolic control was achieved by algorithm-based insulin application. In addition, the algorithm was able to maintain acceptable metabolic control during and after moderate phys. exercise. Further work is needed to optimize continuous tissue **glucose** monitoring systems and to develop a closed loop system for insulin application based on continuously measured tissue **glucose** concns.

IT **50-99-7, D-Glucose**, biological studies
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(blood, anal. of; recent advances in continuous **glucose**

monitoring)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
American Diabetes Assoc	2000	23	32	Diabetes Care	
Berger, M	1982	5	77	Diabetes Care	HCAPLUS
Binder, C	1984	7	188	Diabetes Care	
Hoss, U	1999	48	A103	Diabetes	
Hoss, U		1-6		Diabetologia	
Hoss, U	1998	41	A45	Diabetologia	
Hoss, U	1997			Dissertation	
Hoss, U	1996	28	45	Horm Metab Res	
Hoss, U	1998	30	A14	Horm Metab Res	
Howey, D	1994	43	396	Diabetes	HCAPLUS
Kalatz, B	1999	36	215	Acta Diabetologia	
Kalatz, B	1999			Dissertation	
Keck, F	1991	23	617	Horm Metab Res	MEDLINE
Keck, F	1992	24	492	Horm Metab Res	HCAPLUS
Knisel, W	1999	8	48	Diabetes und Stoffwe	
Knisel, W		1-4		Diabetologia	
Knisel, W	2000	43	A207	Diabetologia	
Loennroth, P	1987	253	E228	Am J Physiol	
Moberg, E	1997	29	440	Horm Metab Res	HCAPLUS
Pfeiffer, E	1988	12	310	Artif Organs	MEDLINE
Schmidt, F	1993	16	695	Diabetes Care	MEDLINE
Schmidtke, D	1998	95	294	Proc Natl Acad Sci	HCAPLUS
Sternberg, F	1995	18	1266	Diabetes Care	MEDLINE
Sternberg, F	1996	39	609	Diabetologia	MEDLINE
The Diabetes Control an	1997	46	271	Diabetes	
The Diabetes Control an	1993	329	977	N Engl J Med	
Torlone, E	1994	37	713	Diabetologia	MEDLINE
UK Prospective Diabetes	1998	352	837	Lancet	HCAPLUS

L88 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:528851 HCAPLUS
DN 136:179922
TI A novel method for continuous online **glucose** monitoring in humans: the comparative **microdialysis** technique
AU **Hoss, Udo**; Kalatz, Brit; **Gessler, Ralf**; **Pfleiderer, Hans-Jorg**; Andreis, Elisabeth; Rutschmann, Malte; Rinne, Helmut; Schoemaker, Michael; Haug, Cornelia; Fussgaenger, Rolf D.
CS Institute of Diabetes Technology at the University of Ulm, Ulm, Germany
SO Diabetes Technology & Therapeutics (2001), 3(2), 237-243
CODEN: DTTHFH; ISSN: 1520-9156
PB Mary Ann Liebert, Inc.
DT Journal

LA English

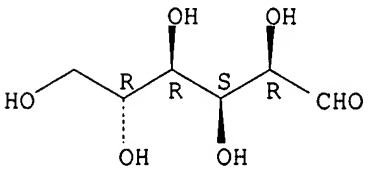
AB The aim of this study was to prove the feasibility of continuous s.c. **glucose** monitoring in humans using the comparative **microdialysis** technique (CMT). The performance of the CMT was determined by comparing tissue **glucose** values with venous or capillary blood **glucose** values in healthy volunteers and type 1 diabetic subjects. The CMT is a **microdialysis**-based system for continuous online **glucose** monitoring in humans. This technique does not require calibration by the patient. Physiol. saline with **glucose** (5.5 mM) is pumped in a stop-flow mode through a **microdialysis probe** inserted into the abdominal s.c. tissue. Tissue **glucose** concentration is calculated by comparing the **dialyzate** and **perfusate glucose** concns. The time delay due to the measurement process is 9 min. We tested the CMT on six healthy volunteers and six type 1 diabetic patients for 24 h in our clin. setting. Comparisons were made to HemoCue analyzer (Angelholm, Sweden) capillary blood **glucose** measurements (healthy volunteers) and to venous blood **glucose** concentration determined with a Hitachi analyzer (diabetic patients). The mean absolute relative error of the CMT **glucose** values from the blood **glucose** values was 17.8±15.5% (n = 167) for the healthy volunteers and 11.0±10.8% (n = 425) for the diabetic patients. The mean difference was 0.42±1.06 mM (healthy volunteers) and -0.17±1.22 mM (diabetic patients). Error grid anal. for the values obtained in diabetic patients demonstrated that 99% of CMT **glucose** values were within clin. acceptable regions (regions A and B of the Clarke Error Grid). The study results show that the CMT is an accurate technique for continuous online **glucose** monitoring.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(novel method for continuous online **glucose** monitoring in humans: comparative **microdialysis** technique)

RN 50-99-7 HCAPLUS

CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Bolinder, J	1997	20	64	Diabetes Care	MEDLINE
Bolinder, J	1989	49	465	Scand J Clin Lab Inv	HCAPLUS
Brunner, G	1998	21	585	Diabetes Care	MEDLINE
Clarke, W	1987	10	622	Diabetes Care	MEDLINE
Garg, S	1999	22	1708	Diabetes Care	MEDLINE
Gifford-Jorgensen, R	1986	9	70	Diabetes Care	MEDLINE
Hoss, U	1997			PCT WO 97/42868 (pat	
Keck, F	1991	23	617	Horm Metab Res	MEDLINE
Keck, F	1992	24	492	Horm Metab Res	HCAPLUS
Mastrototaro, J	1999	12	751	J Pediatr Endocrinol	
Meyerhoff, C	1992	35	1087	Diabetologia	HCAPLUS

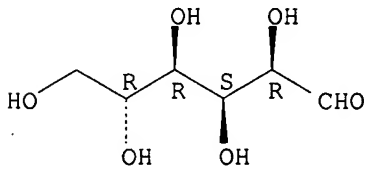
Moberg, E	1997	29	440	Horm Metab Res	HCAPLUS
North, D	1987	10	360	Diabetes Care	MEDLINE
Pfeiffer, E	1993	24	121	Horm Metab Res	
Schmidt, F	1992	15	55	Int J Artif Organs	HCAPLUS
Shichiri, M	1982	2	1129	Lancet	HCAPLUS
The Diabetes Control an	1993	329	977	N Engl J Med	
Trajanoski, Z	1996	19	1412	Diabetes Care	MEDLINE

L88 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:375303 HCAPLUS
DN 134:337912
TI System for the extrapolation of **glucose** concentration for determining insulin dosage
IN Kalatz, Brit; **Hoss, Udo**
PA **Roche Diagnostics G.m.b.H., Germany**
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10057215	A1	20010523	DE 2000-10057215	20001117
	US 6925393	B1	20050802	US 2000-711855	20001113
	JP 2001204817	A2	20010731	JP 2000-351415	20001117
	JP 3594897	B2	20041202		
PRAI	DE 1999-19955734	A1	19991118		

AB The invention concerns a system that contains units to record and store data on time and amount of insulin administration, time and amount of carbohydrate intake, measured **glucose** concentration values and time of measurement; the data are used in a formula to extrapolate **glucose** concentration and to determine the next insulin dosage. The system is integrated with the blood sampling unit and the insulin dosage unit; insulin dosage and carbohydrate intake control is based on the extrapolated data.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(blood; system for extrapolation of **glucose** concentration for determining insulin dosage)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L88 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:394071 HCAPLUS
DN 131:16094
TI Portable device for medical tests with test strip container
IN Kintzig, Hans
PA **Roche Diagnostics G.m.b.H., Germany**

SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

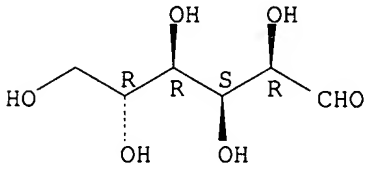
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19755529	A1	19990617	DE 1997-19755529	19971213 <--
	AU 9896071	A1	19990701	AU 1998-96071	19981207 <--
	EP 922959	A1	19990616	EP 1998-123340	19981208 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11242024	A2	19990907	JP 1998-353623	19981211 <--
	US 6176119	B1	20010123	US 1998-210329	19981211 <--
	CN 1227921	A	19990908	CN 1998-125542	19981214 <--
	CN 1123773	B	20031008		
	HK 1022517	A1	20040709	HK 2000-101302	20000301 <--
PRAI	DE 1997-19755529	A	19971213 <--		

AB The invention concerns a portable device for blood glucose determination or other medical anal. that contains a cassette for the storage and handling of the test strips. The test strips are stored in a water resistant container; for anal. purposes they are forwarded to the **probe** area; the test strips are removed from the device by operating a level. The device is equipped with a bar-code reading part, detection, display etc. units; and is operated with batteries.

IT **50-99-7**, D-Glucose, analysis
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(blood; portable device for medical tests with test strip cassette)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(portable device for medical tests with test strip cassette

L88 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:773499 HCAPLUS
DN 128:20293
TI **Glucose** concentration determination in tissue with implantable **microdialysis probe**
IN Pfeiffer, Ernst F.; **Hoss, Udo**
PA Institut fuer Diabetestechnologie Gemeinnuetzige Forschungs- und Entwicklungsgesellschaft Mbh an der Universitaet Ulm, Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

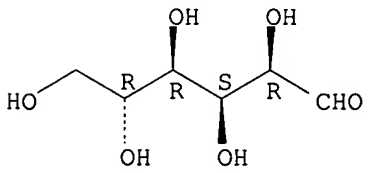
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19618597	A1	19971120	DE 1996-19618597	19960509 <--
	DE 19618597	B4	20050721		
	JP 2000510588	T2	20000815	JP 1997-540418	19970304 <--
PRAI	DE 1996-19618597	A	19960509 <--		
	WO 1997-EP1075	W	19970304 <--		

AB The invention concerns a method for determining **glucose** in s.c. tissue in which a **perfusion** solution **flows** in an implantable **microdialysis probe** to preferably an extracorporeal **flow**-through measuring **cell**. To improve effectiveness, avoid concentration gradients, and reduce dead time, it is suggested that the volume **flow** (V) of the **perfusion** solution during the **dialysis** interval T1 be reduced to a value of V0 and that the volume that is **perfused** during each of the T1 intervals is transferred during consecutive transport intervals (T2) with a higher volume **flow** (V1) to the measuring **cell**. Methods are also described by which hypo- or hyperglycemia can be indicated with an alarm system.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(**glucose** determination in tissue with implantable **microdialysis probe**)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L88 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:673018 HCAPLUS
DN 127:275008
TI Process and setup to determine the concentration of a metabolite in biological tissue
IN Pfeiffer, Ernst F.; **Hoss, Udo**
PA Institut fuer Diabetestechnologie Gemeinnuetzige Forschungs- und Entwicklungsgesellschaft Mbh an der Universitaet Ulm, Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

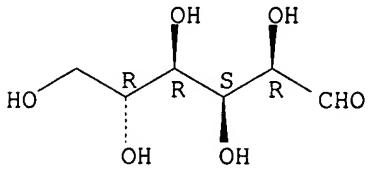
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19612105	A1	19971002	DE 1996-19612105	19960327 <--
	DE 19612105	C2	19981105		
PRAI	DE 1996-19612105		19960327 <--		

AB The invention concerns an implantable **microdialysis probe** that is positioned in tissue, e.g., s.c. fat tissue, and conducts a **perfusion** solution that becomes enriched in the desired metabolite (e.g., lactate, **glucose**, etc.) and is recovered in the **dialyzate** stream. The metabolite is then oxidized with O in

the presence of an enzyme (e.g., lactate oxidase, **glucose** oxidase, etc.), and a reactant-dependent electrode signal is used to calculate the concentration of the metabolite. To prevent incomplete oxidation of the metabolite, especially due to temperature fluctuations, the **dialyzate** stream is enriched with O in an O-permeable reaction channel before reaching the measuring cell. The method and setup can be used for the regulation of **glucose** metabolism in diabetics by permitting the automated, **glucose**-regulated, pos.-feedback-coupled administration of insulin.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(metabolite determination in biol. tissue with electrochem./ **microdialysis** apparatus)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

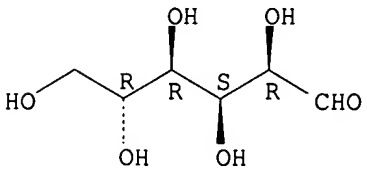
Absolute stereochemistry.



L88 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1995:299630** HCAPLUS
DN **122:75835**
TI Calibration problems of subcutaneous **glucosensors** when applied "in-situ" in man
AU Sternberg, F.; Meyerhoff, C.; Mennel, F. J.; **Hoss, U.**; Mayer, H.; Bischof, Friederike; Pfeiffer, E. F.
CS Institut fuer Diabetes-Technologie, Universitaet Ulm, Ulm, Germany
SO Hormone and Metabolic Research (**1994**), 26(11), 523-5
CODEN: HMMRA2; ISSN: 0018-5043
PB Thieme
DT Journal
LA English
AB Continuous **glucose** monitoring is the condition sine qua non to achieve total automation in **glucose-controlled** insulin-delivery. Several types of **glucosensors** have been designed according to the enzyme-amperometric method to measure the **glucose** in different human compartments. However, problems such as long-term stability and calibration prevent this technique being put into practice. A feasible method is needed to calibrate the **glucosensor** and at the same time should be accepted by the patients. To achieve calibration the authors determined the absolute tissue **glucose**, as well as the **microdialysis** recovery in-vivo, in healthy subjects under normal conditions and during a hyperglycemic clamp by applying a **device** based on the recirculation of phosphate-buffered saline in a **microdialysis probe** implanted in the s.c. adipose tissue. The first expts. carried out were promising and encouraging, but further investigations are still needed to favor an ideal "before implantation, all in-vitro" method to calibrate a s.c. **glucosensor**.
IT **50-99-7**, D **Glucose**, analysis

RL: **ANT (Analyte); ANST (Analytical study)**
(calibration problems of s.c. **glucose** sensors when applied in-situ in man)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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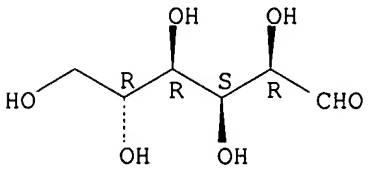
L89 ANSWER 1 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:651122 HCAPLUS
DN 140:317450
TI The SCGM1 System: Subcutaneous Continuous **Glucose** Monitoring Based on **Microdialysis** Technique
AU Schoemaker, Michael; Andreis, Elisabeth; Roeper, Josef; Kotulla, Reinhard; Lodwig, Volker; Obermaier, Karin; Stephan, Peter; Reuschling, Wilhelm; Rutschmann, Malte; Schwaninger, Ralf; Wittmann, Uwe; Rinne, Helmut; Kontschieder, Heinz; Strohmeier, Werner
CS **Roche Diagnostics GmbH, Mannheim, Germany**
SO Diabetes Technology & Therapeutics (2003), 5(4), 599-608
CODEN: DTTHFH; ISSN: 1520-9156
PB Mary Ann Liebert, Inc.
DT Journal
LA English
AB The SCGM1 System is designed to allow continuous **glucose** monitoring in the s.c. interstitial fluid for up to 120 h. The system is based on the **microdialysis** technique and is composed of three components: (1) a disposable Cassette, which contains the **microdialysis** catheter (with the necessary tubes), an electrochem. flow-through sensor for **glucose** measurement, and the fluid reservoirs for both the **microdialysis perfusate** and a reagent solution containing **glucose** oxidase; (2) the Sensor Unit, which houses the Cassette and is worn by the patient using a belt pack; and (3) the Data Manager, with an integrated blood **glucose** meter for the calibration of the **glucose** signal. The Data Manager also has the option of displaying the continuous **glucose** signal. The Sensor Unit and Data Manager exchange **glucose** data and calibration data by radio transmission. In vitro precision was assessed by measurements of two standard **glucose** solns. (90 mg/dL, 3.4%; 360 mg/dL, 2.4%) over a time course of 4 days. The mean difference (± SD) between SCGM1 System devices (n = 11) and 15 **glucose** standard solns. with different concns. was 1.4 ± 3.5 mg/dL. The mean relative difference and the mean absolute relative difference ranged from - 0.6% to 3.7% and from 0.2% to 3.8%, resp. The inherent phys. lag time was 31 ± 2 min (n = 10). The interference on the **glucose** signal of ascorbic acid, acetaminophen, and uric acid at the highest physiol. concns. was below 4%. The SCGM1 System showed a reliable and precise performance under in vitro conditions.
IT **50-99-7, Glucose**, analysis

RL: **ANT (Analyte)**; DGN (Diagnostic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(s.c. continuous **glucose** monitoring based on **microdialysis** technique)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RETABLE

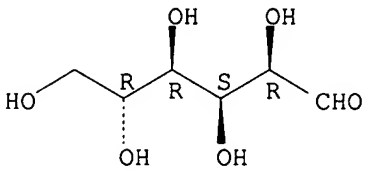
Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Arner, P	1991	230	381	J Intern Med	MEDLINE
Ballerstadt, R	1996	21	225	Adv Drug Delivery Re	HCAPLUS
Bolinder, J	1992	35	1177	Diabetologia	MEDLINE
Bolinder, J	1989	49	465	Scand J Clin Lab Inv	HCAPLUS
Henry, C	1998		594A	Anal Chem News Featu	
Jungheim, K	2001	24	1696	Diabetes Care	MEDLINE
Robert, J	2002	57	81	Horm Res	HCAPLUS
The Diabetic Control an	1993	329	997	N Engl J Med	

L89 ANSWER 2 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:154311 HCAPLUS
DN 138:175952
TI Device for extracting gas or liquid from **microfluidic** through-flow systems especially for **microdialysis** **glucose** monitoring
IN Kraemer, Peter; Effenhauser, Carlo; Koelker, Karl-Heinz; Ocvirk, Gregor
PA **Roche Diagnostics G.m.b.H.**, **Germany**; F. Hoffmann-La **Roche** AG
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003015919	A2	20030227	WO 2002-EP9040	20020813
WO 2003015919	A3	20031106		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10140565	A1	20030306	DE 2001-10140565	20010818
CA 2457629	AA	20030227	CA 2002-2457629	20020813

EP 1425100 A2 20040609 EP 2002-762441 20020813
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
JP 2004538136 T2 20041224 JP 2003-520467 20020813
US 2005000364 A1 20050106 US 2004-487101 20040901
PRAI DE 2001-10140565 A 20010818
WO 2002-EP9040 W 20020813
AB The invention relates to a device which is used to extract gas or liquid from **microfluidic** through-flow systems. Gas or liquid is extracted independently from the spatial position of the device. The invention also relates to a **microfluidic** through-flow system wherein an inventive device enables bubble-free conveyance of fluid. The fluid is flowing through a spherical unit for releasing gases. The unit is part of a **microdialysis** system that is used for continuous sampling of blood for **glucose** determination
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(device for extracting gas or liquid from **microfluidic** through-flow systems especially for **microdialysis glucose** monitoring)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



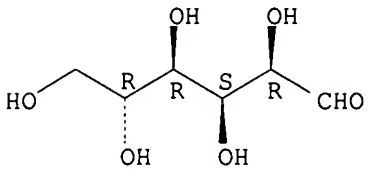
L89 ANSWER 3 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:157018 HCAPLUS
DN 136:180132
TI **Glucose** sensor with **microdialysis probe** and pumps
IN Roeper, Josef; Schoemaker, Michael; Hoerauf, Christian
PA **Roche Diagnostics Gmbh, Germany**
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10038835	A1	20020228	DE 2000-10038835	20000804 <--
DE 10038835	B4	20050707		
US 2002082490	A1	20020627	US 2001-910452	20010720 <--
JP 2002126074	A2	20020508	JP 2001-229622	20010730 <--
PRAI DE 2000-10038835	A	20000804 <--		

AB The invention concerns a **glucose** sensor that is composed of a **microdialysis probe** that is inserted into the tissue, a detector part and a pump system for the transport of the **perfusion** fluid. The part of the **microdialysis probe** is a double-lumen catheter; the two lumens are in connection at the distant end where the catheter is formed of a membrane; this allows the **glucose** to penetrate from the interstitial fluid into the **perfusion** fluid. To assure the pressureless transport of the

perfusion fluid through the **microdialysis probe**
, the **probe** inlet is connected with a compressor and the outlet
is connected with a vacuum pump; the two pumps work synchronized.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(**glucose** sensor with **microdialysis probe** and pumps)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Anon				DE 4401400 A1	HCAPLUS

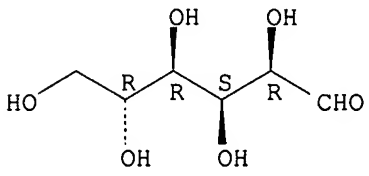
L89 ANSWER 4 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:654667 HCAPLUS
DN 135:192493
TI **Microsensor** for the determination of components in body fluids
IN Effenhauser, Carlo
PA **Roche Diagnostics G.m.b.H., Germany**; F. Hoffmann-La **Roche** AG
SO Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	EP 1129778	A2	20010905	EP 2001-104822	20010227	<--
	EP 1129778	A3	20031112			
	EP 1129778	B1	20060405			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR					
	DE 10010587	A1	20010906	DE 2000-10010587	20000303	<--
	JP 2001276022	A2	20011009	JP 2001-58636	20010302	<--
	JP 3507448	B2	20040315			
PRAI	DE 2000-10010587	A	20000303	<--		

AB The invention concerns **microdialysis sensors** for the determination of analytes in body fluids, especially blood sugar, that are composed of two parts and two sections. The two parts are shaped in a manner that by aligning them a capillary channel is formed. The **sensor** has a sampling section and a measuring section; the measuring section houses the fluid reservoirs, also for the **perfusion** fluid. For sampling, pressure is applied; thus **perfusion** fluid is **flowing** towards the **dialysis** channel. Detailed description of the **sensor** design is given.

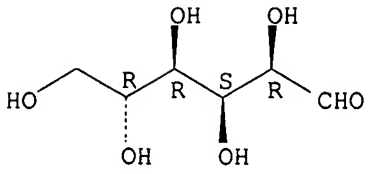
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(blood; **microsensor** for determination of components in body fluids)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 5 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:792717 HCAPLUS
DN 130:206899
TI Slow ultrafiltration for continuous in vivo sampling application for **glucose** and lactate in man
AU Tiessen, Renger G.; Kaptein, Wilhelmina A.; Venema, Kor; Korf, Jakob
CS Biological Psychiatry, University and Academic Hospital of Groningen, Groningen, 9700 RB, Neth.
SO Analytica Chimica Acta (**1999**), 379(3), 327-335
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier Science B.V.
DT Journal
LA English
AB Background: An ultrafiltration (UF) technique was developed for continuous s.c. (s.c.) sampling and online anal. of absolute **glucose** and lactate concns. in tissue. The relation between s.c. and blood concns. was studied in men, because a s.c. monitoring device would put patients on less risks than an intravascular device.Methods: Ultrafiltrates were withdrawn continuously at a **flow** rate of 50-100 nl/min from a hollow fiber **probe** to measure **glucose** in the abdominal subcutis. Six healthy volunteers underwent an oral **glucose** tolerance test. In order to detect **glucose** and lactate in the same sample, a splitter was placed between the online **flow** injection valve and the parallel **enzymic** conversion and electrochem. detection **cells**. Findings: S.c. **glucose** concns. were in steady state on the average 1.06 mM lower. They rose delayed and blunted as compared to blood levels. We demonstrated the ability of simultaneous lactate and **glucose** measurements in vivo (n=2).Interpretation: UF makes continuous monitoring of absolute extracellular concns. in tissue possible. We interpret the deviations of s.c. measurements from intravascular levels in this way that the subcutis is a kinetic compartment not directly and exclusively linked to blood. The observed differences with blood suggest that diabetes management may demand intravascular monitoring. UF combined with anal. of **glucose** and lactate in the same sample offers the opportunity to study pathophysiol. inside tissues.
IT **50-99-7**, **Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(slow ultrafiltration for continuous in vivo sampling application for **glucose** and lactate in man)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Ash, S	1992	38	M416.8	ASAIO J	
Ash, S	1993	39	M699	ASAIO J	MEDLINE
Ash, S	1993	39	M699	ASAIO J	MEDLINE
Bolinder, J	1993	342	1080	Lancet	MEDLINE
Clark, L	1962	102	29	Ann NY Acad Sci	HCAPLUS
de Boer, J	1994	17	163	Int J Artif Organs	MEDLINE
de Boer, J	1991	419	1	J Korf Plugers Arch	HCAPLUS
Elekes, O	1995	239	153	J Korf Clin Chim Act	HCAPLUS
Kaptein, W	1997	12	967	Biosens Bioelectron	HCAPLUS
Linhares, M	1992	64	2831	Anal Chem	HCAPLUS
Linhares, M	1993	11	1121	J Pharm Biomed Anal	HCAPLUS
Linhares, M	1993	10	598	Pharm Res	HCAPLUS
Lonnroth, P	1995	153	375	Acta Physiol Scand	HCAPLUS
Lonnroth, P	1995	153	375	Acta Physiol Scand	HCAPLUS
Lonnroth, P	1987	253	E228	Am J Phys	MEDLINE
Marks, V	1996	251	3	Clin Chim Acta	HCAPLUS
Mascini, M	1996	16	93	Biocyb Biomed Eng	
Moscone, D	1996	34	290	Med & Biol Eng & Com	MEDLINE
Pickup, J	1993	342	1068	Lancet	MEDLINE
Reach, G	1992	64	381A	Anal Chem	HCAPLUS
Renneberg, R	1991	21	173	J Biotechnol	HCAPLUS
Rosdahl, H	1993	471	637	J Physiol (London)	MEDLINE
Sadik, O	1996	11	i	Biosens Bioelectron	HCAPLUS
Schmidt, F	1993	16	695	Diabetes Care	MEDLINE
Schmidtke, D	1998	95	294	Proc Natl Acad Sci U	HCAPLUS
Schneiderheinze, J	1996	68	3758	Anal Chem	HCAPLUS
Stallknecht, B	1996			Dissertation Copenha	
Sternberg, F	1995	18	1266	Diabetes Care	MEDLINE

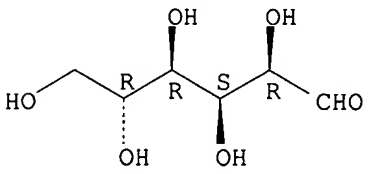
L89 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1998:302375** HCAPLUS
DN **129:66855**
TI Simultaneous monitoring of **glucose** and L-lactic acid during a fermentation process in an aqueous two-phase system by online FIA with **microdialysis** sampling and dual **biosensor** detection
AU Min, Rong Wei; Rajendran, Vijay; Larsson, Niklas; Gorton, Lo; Planas, Jordi; Hahn-Hagerdal, Barbel
CS The Department of Analytical Chemistry, Lund University, Lund, S-221 00, Swed.
SO Analytica Chimica Acta (**1998**), 366(1-3), 127-135
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier Science B.V.
DT Journal
LA English
AB The production of L-lactic acid by Lactococcus lactis (ATCC 19435) during fermentation in an aqueous two-phase system (ATPS) was monitored online using

microdialysis sampling coupled to a dual **flow**-through electrochem. **cell** housing **glucose** and lactate **biosensors**, which enabled the simultaneous and selective monitoring of both **glucose** and L-lactic acid. The amperometric **biosensors** were based on the co-immobilization of **glucose** oxidase (GOD) for the **glucose sensor** and L-lactate oxidase (LOD) for the lactate **sensor**, resp., with horseradish peroxidase (HRP) in a carbon paste matrix. The **sensors** characterized regarding the sensitivities, pH optima and operational stabilities were found to be satisfactory within the required range and time of measurements. The online setup was found to be a flexible system for the monitoring of both **glucose** and L-lactic acid simultaneously, allowing a sampling frequency of 15 h-1 and with a delay between sampling and detection of less than 3 min. Comparison of the online measurements with a standard off-line anal. using HPLC agreed well suggesting the suitability of the system for application in very complex matrixes.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(simultaneous monitoring of **glucose** and L-lactic acid during a fermentation process in aqueous two-phase system by online FIA with **microdialysis** sampling and dual **biosensor** detection)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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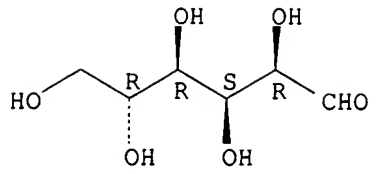
Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Albertsson, P	1986			Partition of cell pa	
Appelqvist, R	1985	169	237	Anal Chim Acta	HCAPLUS
Arnaud, J	1992	14	715	Enzyme Microb Techno	HCAPLUS
Benthin, S	1991	247	45	Anal Chim Acta	HCAPLUS
Benthin, S	1992	261	145	Anal Chim Acta	HCAPLUS
Bibal, B	1988	28	340	Appl Microbiol Biote	HCAPLUS
Buttler, T	1996	324	103	Anal Chim Acta	HCAPLUS
Buttler, T	1994	44	322	Biotechnol Bioeng	HCAPLUS
Buttler, T	1996	275	41	J Chromatogr A	
Champagne, C	1992	58	1429	Appl Environ Microbi	HCAPLUS
Chung, S	1991	249	77	Anal Chim Acta	HCAPLUS
Danielsson, B	1977	81	163	Clin Chim Acta	HCAPLUS
Datta, R	1995	16	221	FEMS Microbiol Rev	HCAPLUS
Dempsey, E	1997	346	341	Anal Chim Acta	HCAPLUS
Dempsey, E	1997	122	185	Analyst	HCAPLUS
Emr, S	1995	7	913	Electroanalysis	HCAPLUS
Garn, M	1989	34	423	Biotechnol Bioeng	HCAPLUS
Ghindilis, A	1997	9	661	Electroanalysis	HCAPLUS
Gorton, L	1992	117	1235	Analyst	HCAPLUS
Gorton, L	1995	7	23	Electroanalysis	HCAPLUS
Gram, J	1990		311	Proc Vth European Co	

Hemmi, A	1995	316	323	Anal Chim Acta	HCAPLUS
Johansson, K	1994	31	301	J Biotechnol	
Kalcher, K	1995	7	5	Electroanalysis	HCAPLUS
Krischke, W	1991	34	573	Appl Microbiol Biote	HCAPLUS
Marko-Varga, G	1993	35	285	Chromatographia	HCAPLUS
Min, R	1995	312	149	Anal Chim Acta	
Min, R	1996	320	199	Anal Chim Acta	HCAPLUS
Min, R	1995			PhD Thesis, Technica	
Narasaiah, D	1996	29	181	Anal Lett	HCAPLUS
Nielsen, J	1990	237	165	Anal Chim Acta	HCAPLUS
Nielsen, J	1989	33	1127	Biotechnol Bioeng	HCAPLUS
Nielsen, J	1995			Doctoral Thesis, Tec	
Nielsen, J	1992	2	371	Process Control and	HCAPLUS
Nikolajsen, K	1988	214	137	Anal Chim Acta	HCAPLUS
Peterson, J	1979	106	207	Anal Chim Acta	
Planas, J	1996	45	737	Appl Microbiol Biote	HCAPLUS
Ridder, C	1982	15	1751	Anal Lett	HCAPLUS
Ruzgas, T	1996	330	123	Anal Chim Acta	HCAPLUS
Ruzicka, J	1988			Flow Injection Analy	
Shu, H	1995	46	280	Biotechnol Bioeng	HCAPLUS
Torto, N	1995	313	15	Anal Chim Acta	HCAPLUS
Ungerstedt, U	1991	230	365	J Int Med	MEDLINE
van de Merbel, N	1994			PhD Thesis, Free Uni	
Vijayakumar, A	1996	327	223	Anal Chim Acta	HCAPLUS
Worsfold, P	1984	164	103	Anal Chim Acta	HCAPLUS

L89 ANSWER 7 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:48331 HCAPLUS
DN 128:189963
TI A **microflow** amperometric **glucose biosensor**
AU Towe, Bruce C.; Pizziconi, Vincent B.
CS Department of Chemical and Bio, Materials Engineering, Arizona State University, Tempe, AZ, 85287, USA
SO Biosensors & Bioelectronics (**1997**), 12(9-10), 893-899
CODEN: BBIOE4; ISSN: 0956-5663
PB Elsevier Science Ltd.
DT Journal
LA English
AB We investigate a small **glucose sensor** that uses a **flow**-through **enzyme** bed and reaction endpoint approach that seems particularly suited to **microdialysis**-type s.c. or intravascular **glucose sensors**. The particular configuration has the advantage of relative insensitivity to blood oxygen changes and also to factors which affect **enzyme** activity compared to conventional polarog. type **glucose sensors**. We evaluate the placement of a **microdialysis** fiber into a near-surface blood vessel in the dog model as a means of blood **glucose** sampling and to determine the effects of protein deposition. We observe a progressive decline in intravascular membrane fiber transport that must be considered in **sensor** design.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(of blood, anal. of; a **microflow** amperometric **glucose biosensor**)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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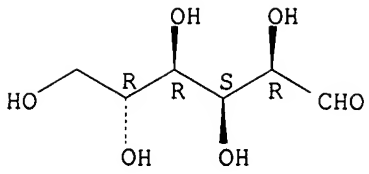
Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Janle-Swain, E	1987	33	336	Trans Am Soc Artif I	HCAPLUS
Keck, F	1991	23	617	Horm Metab Res	MEDLINE
Kerner, W	1993	8	473	Biosensors & Bioelec	HCAPLUS
Kissinger, C	1990	22	94	Am Lab	HCAPLUS
Mascini, M	1992	6	143	Sensors & Actuators	
Meyerhoff, C	1993	16	268	Ant J Artif Intern O	HCAPLUS
Reach, G	1993	21	M35	Analysis	HCAPLUS
Ungerstedt, U	1994		81	Measurement of Neura	
Weetall, H	1976		134	Methods in Enzymolog	HCAPLUS

L89 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:696304 HCAPLUS
DN 128:1572
TI **Microbial** detection by a **glucose biosensor** coupled to a **microdialysis** fiber
AU Palmisano, F.; De Santis, A.; Tantillo, G.; Volpicella, T.; Zambonin, P. G.
CS Dipartimento di Chimica, Universita degli Studi, Bari, 4-70126, Italy
SO Analyst (Cambridge, United Kingdom) (**1997**), 122(10), 1125-1128
CODEN: ANALAO; ISSN: 0003-2654
PB Royal Society of Chemistry
DT Journal
LA English
AB The use of a **glucose biosensor** coupled to **microdialysis** sampling in a **flow** injection anal. system is described to follow the growth of Escherichia coli in a **glucose** -containing liquid culture medium. The exptl. set-up permitted a throughput rate of 25 samples h-1. Growth curves were modelled by a modified Gompertz equation, which permitted the determination of lag time and maximum specific growth rate. The time required to produce an appreciable variation in the **biosensor** response (min. detection time, MDT) was determined A plot of MDT vs. **microbial** concentration was found to be linear in the range 106-1010 colony forming units (cfu) ml-1. A **microbial** concentration of 106 cfu ml-1 can be detected after about 5 h.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(**microbial** detection by a **glucose biosensor** coupled to a **microdialysis** fiber)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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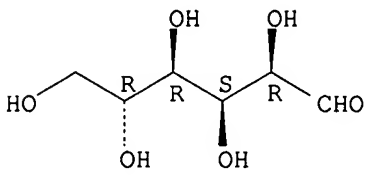
Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Ashley, N	1991	56	39	Dairy Ind Int	
Centonze, D	1992	342	729	J Anal Chem	HCAPLUS
Ding, T	1990	234	247	Anal Chim Acta	
Hobson, N	1996	11	455	Biosens Bioelectron	HCAPLUS
Hope, C	1985	91	12	J Inst Brewing	
Kress-Rogers, E	1993	4	149	J Food Control	
Matsunaga, T	1984	159	87	Anal Chim Acta	HCAPLUS
Palmisano, F	1993	8	393	Biosens Bioelectron	HCAPLUS
Palmisano, F	1996	11	419	Biosens Bioelectron	HCAPLUS
Richards, J	1978	11	560	J Phys	HCAPLUS
Turner, A	1983	11	445	Biochem Soc Trans	HCAPLUS
Wilkins, J	1978	35	214	J Appl Environ Micro	MEDLINE
Zafari, Y	1977	5	545	J Clin Microbiol	MEDLINE
Zwietering, M	1990	56	1857	Appl Environ Microbi	

L89 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1997:495597** HCAPLUS
DN **127:175549**
TI Determination of **glucose** in nonalcoholic beverages by a **biosensor** coupled with **microdialysis** fiber samplers
AU Centonze, Diego; Zambonin, Carlo G.; Palmisano, Francesco
CS Dipartimento di Chimica, Universita degli Studi della Basilicata, Potenza, 85100, Italy
SO Journal of AOAC International (**1997**), 80(4), 829-833
CODEN: JAINEE; ISSN: 1060-3271
PB AOAC International
DT Journal
LA English
AB **Glucose** in soft drinks, fruit juices, and milk was determined by an interference-free amperometric **biosensor** coupled with **microdialysis** fiber samplers. The **biosensor** was based on **glucose** oxidase (GOx) immobilized on a platinum electrode by an electroproduced bilayer of overoxidized polypyrrole (Pt/PPyox,GOx/PPyox). The first undercoating of PPyox entrapped GOx, and the second, grown onto the first, limited **glucose** diffusion, hence improving linearity of response. Such a **biosensor** coupled with **microdialysis** sampling extended the linear range to 500 mM. The **biosensor** response was not affected by sample pH variations in the range 2-10. The influence of **flow** rate on **biosensor** response was also investigated. The **glucose** response of the device in both continuous and discontinuous **flow** injection expts. showed good repeatability and sensitivity. Real samples containing high **glucose** concns. were easily analyzed without pretreatment such as dilution or filtration. Results were in good agreement with those of the reference method.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**

(determination of **glucose** in nonalcoholic beverages by **biosensor** coupled with **microdialysis** fiber samplers)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Amine, A	1991	243	91	Anal Chim Acta	
Centonze, D	1992	82	219	Ann Chim (Rome)	HCAPLUS
Centonze, D	1992	342	729	Fresenius' J Anal Ch	HCAPLUS
Chang, S	1995	67	127R	Anal Chem	HCAPLUS
Groom, C	1994	9	305	Biosensors Bioelectr	HCAPLUS
Lunte, C	1991	63	773A	Anal Chem	HCAPLUS
Luong, J	1991	6	547	Biosensors Bioelectr	HCAPLUS
Malitesta, C	1990	64	2735	Anal Chem	
Matsukura, R	1993	280	49	Anal Chim Acta	HCAPLUS
Niwa, O	1993			Jpn Kokai Tokkyo Koh	HCAPLUS
Palmisano, F	1993	8	393	Biosensors Bioelectr	HCAPLUS
Palmisano, F	1994	9	471	Biosensors Bioelectr	HCAPLUS
Palmisano, F	1996	11	419	Biosensors Bioelectr	HCAPLUS
Robinson, T	1991			Microdialysis in the	
Tzouware-Karayanni, S	1993	48	95	Food Chem	
Wilson, R	1992	7	165	Biosensors Bioelectr	HCAPLUS
Yabuky, S	1995	10	353	Biosensors Bioelectr	

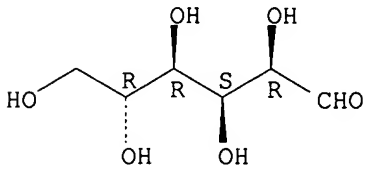
L89 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1997:419994** HCAPLUS
DN **127:146557**
TI Design and development of a **miniaturized** total chemical analysis system for online lactate and **glucose** monitoring in biological samples
AU Dempsey, Eithne; Diamond, Dermot; Smyth, Malcolm R.; Urban, Gerald; Jobst, Gerhard; Moser, Isabella; Verpoorte, Elisabeth M. J.; Manz, Andreas; Widmer, H. Michael; Rabenstein, Kai; Freaney, Rosemarie
CS Department of Chemistry, Regional Technical College, Tallaght, Dublin, 24, Ire.
SO Analytica Chimica Acta (**1997**), 346(3), 341-349
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier
DT Journal
LA English
AB A **miniaturized** Total chemical Anal. System (μTAS) for **glucose** and lactate measurement in biol. samples, e.g., blood, was constructed based on an integrated **microdialysis** sampling and detection system. The complete system incorporates a **microdialysis probe** for intravascular monitoring in an ex vivo **mini**-shunt arrangement, and a silicon **micromachined** stack with incorporated **miniaturized**

flow cell/sensor array. The prototype **device** was developed based on state-of-the-art membrane and printed circuit board technol. The **flow**-through detection system is based on a 3-dimensional **flow** circuit incorporating silicon chips with stacked **micromachined** channels. An integrated **biosensor** array (comprising **enzyme sensors** specific for **glucose** and lactate) is placed at the base of the stack allowing the detector to be incorporated within the μTAS assembly. These **glucose** and lactate **biosensors** are prepared by using photolithog. techniques, with measurement based on the detection of hydrogen peroxide at **glucose oxidase**- and lactate **oxidase**-modified Pt electrodes. The resulting amperometric current (at 500 mV vs. Ag/AgCl) is proportional to the concentration of analyte in the sample. All instrumentation is under computer **control** and the complete unit allows continuous online monitoring of **glucose** and lactate, with fast stable signals over the relevant physiol. range for both analytes. The **microdialysis** system provides 100% sampling efficiency. **Sensor** performance studies undertaken include optimization of sensitivity, linearity, operational stability, background current, storage stability, and hydration time. The total system (sampling and detection) response time is of the order of 4 min, with **sensor** sensitivity 1-5 nA/mM for **glucose** and lactate over the range 0.1-35 and 0.05-15 mM, resp.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(**miniaturized** total chemical anal. system for online lactate and **glucose** monitoring in biosamples)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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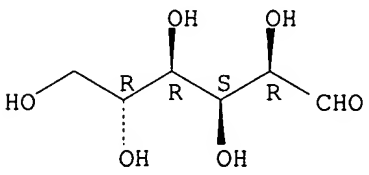
Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Dempsey, E	1997	122	185	Analyst	HCAPLUS
Effenhauser, C	1991	63	802	Anal Chem	
Freaney, R	1997	34	1	Ann Clin Biochem	
Garn, M	1989	34	423	Biotech and Bioeng	HCAPLUS
Geise, R	1991	6	151	Biosensors and Bioel	HCAPLUS
Manz, A	1990	B1	244	Sensors and Actuator	HCAPLUS
Manz, A	1990	B1	249	Sensors and Actuator	HCAPLUS
Manz, A	1991	10	140	Trends in Anal Chem	
Monnig, C	1991	63	802	Anal Chem	HCAPLUS
Moser, I	1995	10	527	Biosensors and Bioel	HCAPLUS
Rabenstein, K	1996	4	67	Technol Health Care	MEDLINE
Reach, G	1992	64	381A	Anal Chem	HCAPLUS
Ruzicka, J	1984	161	1	Anal Chim Acta	HCAPLUS
Sasso, S	1990	62	1111	Anal Chem	HCAPLUS
Terry, S	1975			Ph D Dissertation, S	

Urban, G	1994	B18-B	592	Sensors and Actuator	
Wandrup, J	1989	35	1740	Clin Chem	HCAPLUS

L89 ANSWER 11 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1997:415891** HCAPLUS
DN **127:119130**
TI Novel instrumentation for real-time monitoring using **miniaturized flow** systems with integrated **biosensors**
AU Freany, R.; McShane, A.; Keaveny, T. V.; McKenna, M.; Rabenstein, K.; Scheller, F. W.; Pfeiffer, D.; Urban, G.; Moser, I.; Jobst, G.; Manz, A.; Verpoorte, E.; Widmer, M. W.; Diamond, D.; Dempsey, E.; Saez de Viteri, F. J.; Smyth, M.
CS St Vincent's Hospital, Elm Park, Dublin, 4, Ire.
SO Annals of Clinical Biochemistry (**1997**), 34(3), 291-302
CODEN: ACBOBU; ISSN: 0004-5632
PB Royal Society of Medicine Press
DT Journal
LA English
AB A prototype **miniaturized** Total Chemical Anal. System (μTAS) has been developed and applied to online monitoring of **glucose** and lactate in the core blood of anesthetized dogs. The system consists of a highly efficient **microdialysis** sampling interface sited in a small-scale extracorporeal shunt circuit ("**MiniShunt**"), a silicon machined **microflow** manifold and integrated **biosensor** array for **glucose** and lactate detection with associated computer software for anal. process **control**. During in-vivo testing the **device** allowed real-time on-screen monitoring of **glucose** and lactate with system response times of less than 5 min, made possible by the small dead volume of the **microflow** system. Online **glucose** and lactate measurements were made in the basal state as well as during i.v. infusion of **glucose** or lactate. The prototype μTAS is currently suitable for trend monitoring but refinements are necessary before application of the system for determination of individual lactate values.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(novel instrumentation for real-time monitoring using **miniaturized flow** systems with integrated **biosensors**)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Alberti, T	1990	18	275	Crit Care Med	
Alcock, S	1994		319	IEEE Engl Med Biol	
Anonymous	1992	339	1326	Lancet	
Armour, J	1990	39	1519	Diabetes	HCAPLUS

Arner, P	1991	230	381	J Intern Med	MEDLINE
Benveniste, H	1990	35	195	Progr Neurobiol	HCAPLUS
Bruckel, J	1990	22	382	Horm Metab Res	MEDLINE
de Boer, J	1991	419	1	Pflugers Arch	HCAPLUS
Fischer, U	1994	26	515	Horm Metab Res	HCAPLUS
Fogt, E	1990	36	1573	Clin Chem	MEDLINE
Hakanson, H	1993	8	213	Biosens Bioelectron	MEDLINE
Haskiguchi, Y	1994	17	387	Diabetes Care	
Hinkers, H	1995			Conference Proceedin	
Jansson, P	1988	255	E218	Am J Physiol	HCAPLUS
Jobst, G	1993	8	123	Biosens Bioelectron	HCAPLUS
Johnson, K	1992	7	709	Biosens Bioelectron	HCAPLUS
Kadish, A	1963	1	171	Biomed Instrum	
Keck, F	1993	B15-1	435	Sens Actuators	
Kerner, W	1993	8	1	Biosens Bioelectron	
Linhares, M	1992	11	171	Trends Anal Chem	HCAPLUS
Lunte, C	1991	63	773A	Anal Chem	HCAPLUS
Manz, A	1990	B1	244	Sens Actuators	HCAPLUS
Mascini, M	1992	B6	143	Sens Actuators	HCAPLUS
Meyerhoff, C	1993	8	409	Biosens Bioelectroni	HCAPLUS
Meyerhoff, C	1992	35	1087	Diabetologia	HCAPLUS
Moussy, F	1993	65	2072	Anal Chem	HCAPLUS
Pfeiffer, E	1974	6	339	Horm Metab Res	MEDLINE
Pickup, J	1989	32	213	Diabetologia	MEDLINE
Preidel, W	1990	B2	257	Sens Actuators	HCAPLUS
Prentice, A	1990	16	28	Intensive Care Med	MEDLINE
Rabenstein, K	1996	4	67	Technol Health Care	MEDLINE
Rishpon, J	1994	6	17	Electroanalysis	HCAPLUS
Rosdahl, H	1993	471	637	J Physiol (Lond)	MEDLINE
Rosevear, J	1969	15	680	Clin Chem	HCAPLUS
Saez de Viteri, F	1994	31	229	Anal Proc Incl Anal	HCAPLUS
Schmidt, F	1992	15	55	Int J Artif Organs	HCAPLUS
Scott, D	1993	10	335	Pharmacol Res	HCAPLUS
Shichiri, M	1982	ii	1129	Lancet	
Sternberg, F	1994	37	540	Diabetologia	MEDLINE
Stjernstrom, H	1993	19	423	Intensive Care Med	MEDLINE
The Diabetes Control An	1993	329	977	N Engl J Med	
Ungerstedt, U	1991	230	365	J Intern Med	MEDLINE
Urban, G	1995	2	459	Conference Proceedin	
Urban, G	1994		249	Development of a Mic	
Vadgama, P	1991	3	597	Electroanalysis	HCAPLUS
Velho, G	1988	1	227	Diabetes Nutr Metab	
Verpoorte, E	1994	4	246	J Micromech Microeng	HCAPLUS
Wilson, R	1992	7	165	Biosens Bioelectron	HCAPLUS
Yang, L	1995	14	31	Curr Separat	HCAPLUS

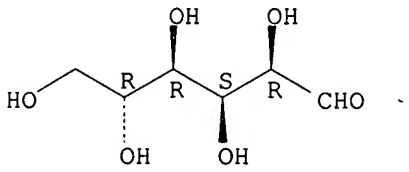
L89 ANSWER 12 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:405100 HCAPLUS
DN 127:146555
TI Optical chemo- and **biosensors** for use in clinical applications
AU Mueller, C.; Hitzmann, B.; Schubert, F.; Scheper, T.
CS Universitaet Hannover, Institut fuer Technische Chemie, Callinstrasse 3, D-30167, Hannover, Germany
SO Sensors and Actuators, B: Chemical (**1997**), B40(1), 71-77
CODEN: SABCEB; ISSN: 0925-4005
PB Elsevier
DT Journal
LA English
AB The development of pH-based fiber-optic **biosensors** for penicillin, urea, creatinine, and **glucose** and their uses in

clin. applications are described. A simple but very efficient way of constructing **biosensors** is to immobilize an **enzyme** layer directly on the tip of a pH optode. **Biosensors** based on pH **probes** depend on critical factors such as the pH value and buffer ion concentration in the sample media. Since **biosensors** cannot be sterilized due to the instability of the biol. component, they are normally integrated into **flow**-injection-anal. (FIA) systems. The complex signal is transformed and analyzed by a computer system. Characteristic features of the FIA peak give information about the buffer capacity in the solution With the help of intelligent computing (neural networks), it is possible to recognize these features and relate them to the resp. buffer capacity to obtain more accurate values.

IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); USES (Uses)
(optical chemo- and **biosensors** for clin. applications)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



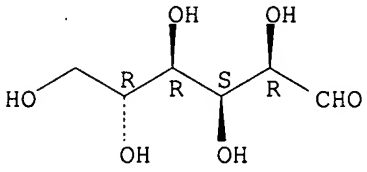
RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Borman, S	1981	53	1616A	Anal Chem	
Hitzmann, B	1993	16	450	BIOForum	HCAPLUS
Janata, J	1988	60	62R	Anal Chem	HCAPLUS
Kruse, H	1991			Programmierung Neuro	
Kullick, T	1993		65	In Vivo Chemical Sen	
Muller, C	1993	3	64	BIOforum	
Muller, C	1993	65	1086	Chem-Ing-Techn	
Muller, C	1994	2131	555	SPIE Proc, Biomedica	
Scheller, F	1989			Biosensoren	
Scheper, T	1994	9	73	Biosensors Bioelectr	HCAPLUS
Scheper, T	1993	31	345	J Biotechnol	HCAPLUS
Zhujun, Z	1982	54	821	Anal Chem	

L89 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:149068 HCAPLUS
DN 126:248406
TI In vitro optimization of a **microdialysis** system with potential for online monitoring of lactate and **glucose** in biological samples
AU Dempsey, Eithne; Diamond, Dermot; Smyth, Malcolm R.; Malone, Michael A.; Rabenstein, Kai; McShane, Alan; McKenna, Malachi; Keaveny, T. Vincent; Freaney, Rosemarie
CS Dep. Chem., Regional Technical College, Dublin, 24, Ire.
SO Analyst (Cambridge, United Kingdom) (**1997**), 122(2), 185-189
CODEN: ANALAO; ISSN: 0003-2654
PB Royal Society of Chemistry
DT Journal

LA English
AB The optimization and evaluation of the **microdialysis** component of a prototype **miniaturized** total anal. system for application in the continuous monitoring of lactate and **glucose** is reported. The complete unit comprises a high efficiency **microdialysis** sampling system, a **miniaturized microflow** manifold with an integrated **biosensor** array, together with the hardware and software necessary for controlling the **flow** parameters and monitoring the **sensor** signals. Sampling occurs via a **microdialysis** shunt **probe** which is **perfused** continuously with a physiol. buffered saline solution The continuous **dialyzate** outflow is presented to the **biosensor** array, resulting in the appropriate amperometric signals. Aspects of technol. significance addressed here include **probe** membrane size, **perfusate flow** rate, sample **flow** rate, temperature change, **probe** sterilization procedures, and heparin content of the physiol. saline solution employed.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(In vitro optimization of a **microdialysis** system with potential for online monitoring of lactate and **glucose** in biol. samples)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

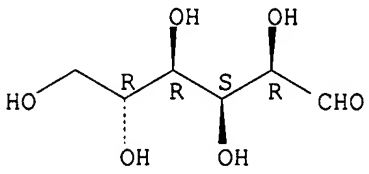
Absolute stereochemistry.



L89 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1996:606106 HCAPLUS
DN 125:242259
TI **Microdialysis** system for continuous **glucose** monitoring
AU Steinkuhl, R.; Sundermeier, C.; Hinkers, H.; Dumschat, C.; Cammann, K.; Knoll, M.
CS Inst. Chemo- Biosensorik e.V., Muenster, D-48149, Germany
SO Sensors and Actuators, B: Chemical (**1996**), B33(1-3), 19-24
CODEN: SABCEB; ISSN: 0925-4005
PB Elsevier
DT Journal
LA English
AB A **microdialysis** system for continuous **glucose** monitoring was developed. The system was optimized for in vivo applications. All the components were **miniaturized** to get a small wearable device. It consists of a small gas driven syringe pump, a **microdialysis** sampling stage, a specially developed silicon **flow**-through **sensor** chip and the electronics. Integrated on the **sensor** chip are the **glucose** **sensor** elements together with a system of capillaries and **flow** channels. Each process step of the chip fabrication was designed as a full wafer process to achieve mass-production compatibility. The total system performance was demonstrated by in vitro measurements taken from human serum and **glucose** standard solns.

IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process); USES (Uses)
(**microdialysis** system for continuous **glucose** monitoring)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

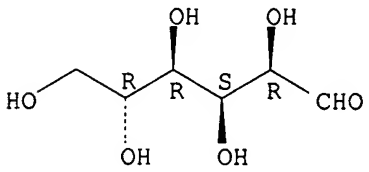
Absolute stereochemistry.



L89 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1996:312717** HCAPLUS
DN **125:31972**
TI Evaluation of detection and sample clean-up techniques for on- and off-line fermentation monitoring systems
AU Buttler, Torbjoern; Liden, Helena; Joensson, Jan Ake; Gorton, Lo; Marko-Varga, Gyoergy; Jeppsson, Helena
CS Dep. Anal. Chem., Univ. Lund, Lund, S-221 00, Swed.
SO Analytica Chimica Acta (**1996**), 324(2-3), 103-113
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier
DT Journal
LA English
AB Two different anal. systems for monitoring of fermentation processes were evaluated for the anal. of 3 carbohydrates: **glucose**, xylose, and galactose. Samples taken during a **controlled** fermentation of the 3 sugars to EtOH were treated and analyzed with both systems for the carbohydrate content. The 1st was an off-line system, based on manual sampling and clean-up, and column liquid chromatog. (LC) in combination with refractive index (RI) detection and the other was an online set-up, based on **microdialysis** sampling, LC, and an amperometric carbohydrate biosensor as the detection **device**. The manual clean-up consisted of centrifugation, filtration of the supernatant, and dilution First, the different clean-up procedures were compared and the other parts of the system were kept constant, viz. the LC separation and the RI detector. Evaluation of the anal. response using the 2 clean-up procedures yielded in 12 of 13 cases higher values for the **microdialysis probe** than for the manual procedure. Two different statistical methods, one based on linear regression and another a paired t-test, found the difference between the 2 clean-up procedures to be statistically significant. Detailed investigation of the manual clean-up procedure using anal. of variance (ANOVA) revealed that for identical samples treated by this method, a significant difference in-between the samples after treatment was found. Next, the 2 detection techniques were compared using the manual clean-up procedure in combination with LC. The sugar content in 15 of 16 samples was higher for the RI detector than for the biosensor and also in this case both the linear regression method and the paired t-test showed the difference to be statistically significant. Finally, studies on the performance of **microdialysis probe** membranes after use in a fermentation medium are presented.

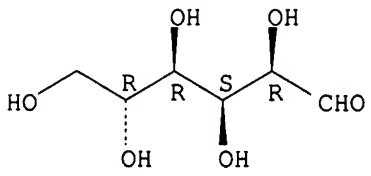
IT **50-99-7, Glucose**, biological studies
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); **ANST (Analytical study)**; BIOL (Biological study); PROC (Process)
(detection and sample clean-up techniques for on- and off-line fermentation monitoring systems)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



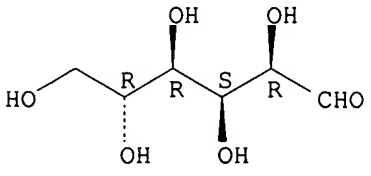
L89 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:706866 HCAPLUS
DN 123:137742
TI pH-based fiber optic **biosensors** for use in clinical and biotechnological applications
AU Mueller, Cord; Hitzmann, Bernd; Schubert, Florian; Scheper, Thomas
CS Institut fur Bioch., Wilhelms-Universitat, Muenster, 48149, Germany
SO Proceedings of SPIE-The International Society for Optical Engineering (**1995**), 2388(Advances in Fluorescence Sensing Technology II), 558-67
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
AB The development of pH-based fiber optic **biosensors** and their uses in clin. and biotechnol. applications are described. Based on a pH-sensitive optode, different **biosensors** for urea, penicillin, **glucose** and creatinine were developed. A multichannel modular fluorometer was used to measure signals from up to three optodes simultaneously. The pH value and the buffer capacity are critical factors for **biosensors** based on pH **probes** and influence the **biosensor** signal. A **flow** injection anal. (FIA) system is used to eliminate the latter influences. With this integrated system, samples can be analyzed sequentially by the injection of a defined volume of each sample into a continuously **flowing** buffer stream that transports the samples to the **sensors**. The complex signal is transformed and analyzed by a computer system. Characteristic features of the FIA peak give information about the buffer capacity in the solution With the help of intelligent computing (neural networks) it is possible to recognize these features and relate them to the resp. buffer capacity to obtain more accurate values. Various applications of these **biosensors** are discussed. The pH optode is also used to monitor **enzymic** reactions in non aqueous solvents. In this cases the production of acetic acid can be detected on line.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(pH-based fiber optic **biosensors** for use in clin. and biotechnol. applications)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:277958 HCAPLUS
DN 122:50362
TI **Biosensors** for in vivo monitoring
AU Mascini, M.; Moscone, D.; Anichini, M.
CS Sezione di Chimica Analitica, Dipartimento di Sanita Pubblica, Epidemiologia e Chimica Analitica, Florence, 50121, Italy
SO Special Publication - Royal Society of Chemistry (**1994**), 154(Reviews on Analytical Chemistry--Euroanalysis VIII), 298-307
CODEN: SROCDO; ISSN: 0260-6291
DT Journal
LA English
AB **Biosensors** have been developed for in vivo monitoring of **glucose** in animals and humans by implanting, in the s.c. fluid, a hollow fiber and by **perfusing** it with a physiol. buffer. The hollow fiber mimics the function of a blood vessel; substances in higher concentration (like **glucose**) in the extracellular fluid outside the hollow fiber diffuse in. A **flowing cell** assembled with a **glucose biosensor** has been connected in series to a **microdialysis probe**. **Glucose** can be analyzed in the range 0.1-20 mmol-1. Expts. with rabbits and humans submitted to a '**glucose** load' have been successfully carried out.
IT **50-99-7**, **Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(**biosensors** for in vivo monitoring)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



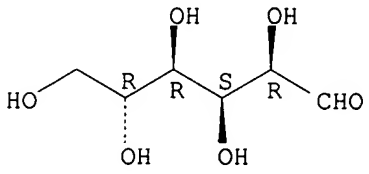
L89 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:430487 HCAPLUS
DN 121:30487
TI Portable apparatus and method for **microanalysis**
IN Suzuki, Tatsuo
PA Nikkiso Co Ltd, Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06090791	A2	19940405	JP 1992-244994	19920914 <--
	JP 07047000	B4	19950524		
PRAI	JP 1992-244994		19920914 <--		

AB The title apparatus comprises a pump deriven by chemical reaction-produced gas for delivery of irrigating solution to **dialysis probe**, and a **flow cell**-type **enzyme biosensor** for determining the **micro**-amount of analyte (e.g. **glucose**) in the irrigating solution after **dialysis**.
IT **50-99-7**, **Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(determination of, **microanal**. apparatus containing chemical reaction produced gas-deriven pump and **flow cell**-type **enzyme biosensor** for)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

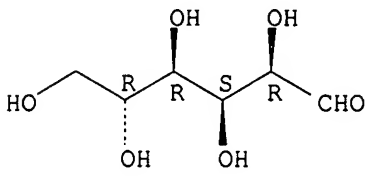
Absolute stereochemistry.



L89 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:239307 HCAPLUS
DN 120:239307
TI **Microdialysis** and **glucose biosensor** for in vivo monitoring
AU Moscone, D.; Mascini, M.
CS Dip. Sci. Tecnol. Chim., II Univ., Rome, 00173, Italy
SO Annales de Biologie Clinique (**1992**), 50(5), 323-7
CODEN: ABCLAI; ISSN: 0003-3898
DT Journal
LA English
AB **Microdialysis** coupled to a **glucose biosensor** led to a continuous monitoring system in vivo for **glucose**. Several **microdialysis probes** were used to stabilize the **biosensor** response. In vivo expts., especially when the **probe** was placed s.c., showed that the sensitivity of the **biosensor** decreased continuously; various kinds of fibers with a mol. weight cut-off ranging from 6000 to 20,000 were compared. A wall-jet **flow cell** as detector for **glucose** showed less interference when compared to a thin layer **cell**. Glucoday, a new com. instrument based on this principle, is presented.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(determination of, in vivo, **microdialysis**-based **biosensor** for)
RN 50-99-7 HCAPLUS

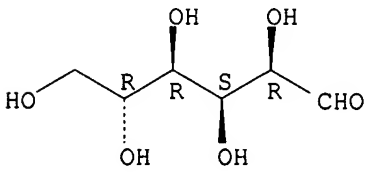
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 20 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:598783 HCAPLUS
DN 119:198783
TI **Microdialysis** implemented in the design of a system for continuous **glucose** monitoring
AU Laurell, Thomas
CS Department of Electrical Measurements, Lund Institute of Technology, Lund University, PO Box 118, Lund, S-221 00, Swed.
SO Sensors and Actuators, B: Chemical (**1993**), 13(1-3), 323-6
CODEN: SABCEB; ISSN: 0925-4005
DT Journal
LA English
AB A system for continuous **glucose** measurements was developed. The monitoring system is based on **glucose** withdrawal from the sample site via a **microdialysis** fiber. By **perfusing** the **microdialysis** fiber with a saline solution, the **glucose** variations around the fiber can also be observed in the **perfusion** liquid exiting the fiber. The **perfusion** liquid is passed on to a **glucose sensor** where the readout of the **glucose** concentration is performed. A brief description of the design of the **microdialysis probe** and the **glucose sensor** is presented. The system is calibrated in vitro for 2 different **flow** rates and displays a linear calibration plot within 0-3.5 mmol at 12 μL/min and 0-7 mmol at 25 μL/min. By inserting the **microdialysis probe** s.c., a continuous in vivo monitoring sequence has been performed and compared with the actual blood **glucose** values of the patient.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(detection of, in human blood, **microdialysis** implemented in design of system for)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1993:232297** HCAPLUS

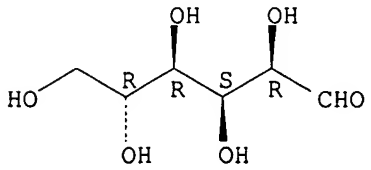
DN **118:232297**
TI A study of the use of **microdialysis probes** as a sampling unit in on-line bioprocess monitoring in conjunction with column liquid chromatography
AU Marko-Varga, G.; Buttler, T.; Gorton, L.; Groensterwall, C.
CS Dep. Anal. Chem., Univ. Lund, Lund, 221 00, Swed.
SO Chromatographia (**1993**), 35(5-6), 285-9
CODEN: CHRGB7; ISSN: 0009-5893
DT Journal
LA English
AB An automated online sampling and anal. set-up for the **control** of fermns. was studied incorporating a **microdialysis probe** as the sampling **device**. Applications to a penicillin broth and an ethanol fermentation were studied. Typical recovery values of carbohydrates were close to 100% even after exposure of the **microdialysis probe** in the process for about 30 h.

L89 ANSWER 22 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:208961 HCAPLUS
DN 118:208961
TI Method and **dialysis probe** for determination of constituents in body fluids
IN Pfeiffer, Ernst F.; Meyerhoff, Carsten; Zier, Horst; Keck, Fritz S.; Kerner, Wolfgang
PA Institut fuer Diabetestechnologie Gemeinnuetzige Forschungs- und Entwicklungsgesellschaft G.m.b.H., Germany
SO Ger. Offen., 7 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4130742	A1	19930318	DE 1991-4130742	19910916 <--
PRAI DE 1991-4130742		19910916 <--		

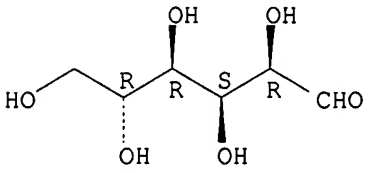
AB The title **probe**, to be implanted in s.c. tissue, consists of a double-lumen catheter closed at the distal end. A **perfusion** fluid is pumped in through the inner lumen and returns through the outer lumen, which is in fluid contact through a **dialysis** membrane with the tissue. The fluid then passes through a **flow cell** containing an **enzyme** electrode to determine, e.g., **glucose** or lactic acid in the tissue fluid.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(determination of, in tissue fluid, **dialysis probe** and **enzyme sensor** for)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1993:97483** HCAPLUS
DN **118:97483**
TI Online continuous monitoring of subcutaneous tissue **glucose** in men by combining portable **glucosensor** with **microdialysis**
AU Meyerhoff, C.; Bischof, F.; Sternberg, F.; Zier, H.; Pfeiffer, E. F.
CS Inst. Diabetes Technol., Univ. Ulm, Ulm, Germany
SO Diabetologia (**1992**), 35(11), 1087-92
CODEN: DBTGAJ; ISSN: 0012-186X
DT Journal
LA English
AB For the normalization of blood **glucose** levels in diabetic patients by feedback **controlled** insulin delivery, a self-manageable and reliable method for continuous **glucose** estimation is still not available. By combining a com. available needle type **dialysis probe** (mol. cutoff 20,000 Da) with a sensitive **glucose** sensor, the authors obtained a **device** for continuous **glucose** measurement in **dialyzate**. This **device** was tested in healthy volunteers during a 75-g oral **glucose** tolerance test and in Type 2 (non-insulin-dependent) diabetic patients. Venous **glucose** and s.c. sensor signal were followed for 300 min (ten healthy subjects), 21 h (three healthy subjects), or 9 h (seven Type 2 diabetic patients). The recovery of the **microdialysis** was interindividually different, but after calibration, **glucose** levels in the **dialyzate** and s.c. **glucose** sensor signal correlated well (r = 0.84-0.95). Under the assumption of a physiol. and tech. delay between i.v. and s.c. **glucose**, correlation coefficient between i.v. **glucose** and s.c. sensor signal ranged from 0.60 to 0.93. Changes in blood **glucose** could be monitored in the s.c. tissue by the **microdialysis** technique in a continuous online manner.
IT **50-99-7, Glucose**, analysis
RL: **ANT (Analyte); ANST (Analytical study)**
(determination of, in s.c. tissue, online continuous monitoring by portable sensor and **microdialysis** in)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

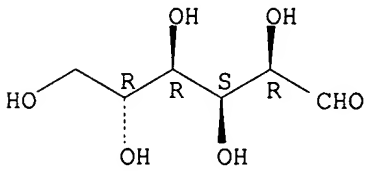
Absolute stereochemistry.



L89 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:55558 HCAPLUS
DN 118:55558
TI Combination of **microdialysis** and **glucosensor** permits continuous (online) s.c. **glucose** monitoring in a patient-operated device. II. Evaluation in animals
AU Keck, F. S.; Meyerhoff, C.; Kerner, W.; Siegmund, T.; Zier, H.; Pfeiffer, E. F.
CS Med. Klin. Poliklin., Univ. Ulm, Ulm, Germany
SO Hormone and Metabolic Research (**1992**), 24(10), 492-3
CODEN: HMMRA2; ISSN: 0018-5043

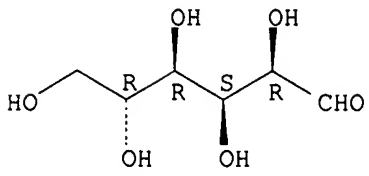
DT Journal
LA English
AB The **microdialysis** technique was used for following the **glucose** content of the extracellular s.c. fluid under varying blood **glucose** levels in rats. The **glucose** content in the **microdialysis perfusion** fluid was continuously analyzed by means of the measuring **flow** chamber of an ex vivo **glucose** monitor. In 6 ChBB rats blood **glucose** levels were varied between 40 and 575 mg/dL by i.v. infusion of **glucose** and by s.c. injections of insulin, resp. After a running-in period of about half an hour, the **glucose** content in the **perfusion** fluid was closely related to the blood **glucose** concentration ($r > 0.92$) up to a time period of 6 h. The relative recovery rate of **glucose** by the **microdialysis probe** in the s.c. tissue varied within the 6 exptl. sessions. The relative recovery rate was not dependent on the absolute blood **glucose** levels in the individual rat within the **glucose** concentration range tested.
IT **50-99-7**, D-**Glucose**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(determination of, in human s.c. tissue, combined **microdialysis** and **glucose sensor** for online)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



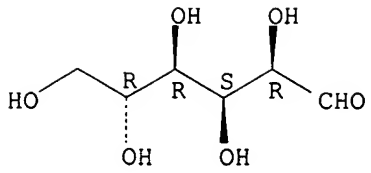
L89 ANSWER 25 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1992:527490 HCAPLUS
DN 117:127490
TI Electrochemically modulated optrode for **glucose**
AU Guanasingham, Hari; Tan, Chin Huat
CS Dep. Chem., Natl. Univ. Singapore, Singapore, 0511, Singapore
SO Biosensors & Bioelectronics (**1992**), 7(5), 353-9
CODEN: BBIOE4; ISSN: 0956-5663
DT Journal
LA English
AB One of the problems with fiber optic **sensors** is the difficulty of finding reversible indicator reagents. This is a particular problem for fiber-optic **glucose sensors**. The development of an electrochem. modulated fiber-optic **probe** or optrode has been proposed as a convenient solution Here the indicator reagent is regenerated electrochem. In this work a design is proposed that offers considerable advantages in practical applications. In particular, it can be used in the same way as conventional optrodes. The optimization of working parameters and the application of the optrode to **flow** anal. under steady-state and **flow**-injection conditions is described.
IT **50-99-7**, **Glucose**, analysis
RL: **ANST (Analytical study)**
(optrode for, electrochem. modulated)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



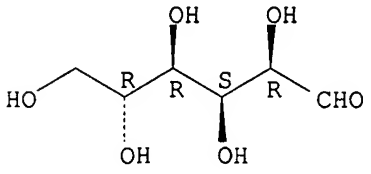
L89 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1989:628415** HCAPLUS
DN **111:228415**
TI **Microdialysis** of subcutaneous adipose tissue in vivo for continuous **glucose** monitoring in man
AU Bolinder, J.; Hagstroem, E.; Ungerstedt, U.; Arner, P.
CS Dep. Med., Huddinge Hosp., Stockholm, Swed.
SO Scandinavian Journal of Clinical and Laboratory Investigation (**1989**), 49(5), 465-74
CODEN: SJCLAY; ISSN: 0036-5513
DT Journal
LA English
AB S.c. adipose tissue extracellular **glucose** was investigated in vivo in man with a **microdialysis** technique. A small **dialysis probe** (4 or 10 + 0.5 mm) was implanted s.c., and was **perfused** continuously with a **microinfusion** pump. **Dialyzate** samples were collected in 15-min periods. A transient yield of ATP was recorded immediately after insertion of the **probe**; thereafter, ATP was almost undetectable. During steady-state conditions the tissue **dialyzate glucose** concentration remained constant for at least 2 h, which indicated that there was no drainage of **glucose** from the interstitial fluid to the tissue **dialyzate**. Simultaneous **dialysis** of venous blood and s.c. fat in rats showed that the recovery of **glucose** from the adipose tissue interstitial fluid to the **dialyzate** was only 20% of that from blood. However, in vivo **dialysis** of human adipose tissue with **glucose**-containing solns. produced an equilibrium with the extracellular space at a **glucose** concentration that was similar to the blood **glucose** concentration After oral **glucose** ingestion and following i.v. insulin and **glucose** administration the relative variations in s.c. **glucose** closely resembled those in blood **glucose**. It is concluded that the s.c. implantation of the presently used small **dialysis device** causes only minor and transient traumatic effects. The **dialysis** recovery of **glucose** is lower in the adipose tissue than in blood. However, the relative kinetics of s.c. tissue **dialyzate glucose** are closely related to variations in the blood **glucose** concentration, and thus may be used for monitoring of glycemic **control** in man.
IT **50-99-7, Glucose**, biological studies
RL: BIOL (Biological study)
(monitoring of, **microdialysis** of s.c. adipose tissue for, in humans)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1989:474077 HCAPLUS
DN 111:74077
TI **Glucose** clamp experiments with electrochemical **biosensors**
AU Palleschi, G.; Mascini, M.; Bernardi, L.; Bombardieri, G.; De Luca, A. M.
CS Dip. Sci. Tecnol. Chim., Univ. Roma "Tor Vergata", Rome, 00173, Italy
SO Analytical Letters (**1989**), 22(5), 1209-20
CODEN: ANALBP; ISSN: 0003-2719
DT Journal
LA English
AB **Glucose**, lactate, and potassium ions have been continuously measured in whole blood using two extracorporeal electrochem. **biosensors** and a new **flow**-through potassium electrode using the **glucose** clamp technique. Expts. were carried out with a properly modified endocrine artificial pancreas, Betalike, by connecting this instrument in series with the lactate and potassium **probes**. Apparently, it is possible to monitor all three metabolites with accuracy and precision, allowing an improved control in diabetes care.
IT **50-99-7**
RL: **ANST (Analytical study)**
(blood analysis, **glucose** and lactate and potassium determination in, with electrodes in **glucose** clamp expts.)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RL: BIOL (Biological study)
(clamp, electrodes for expts. in

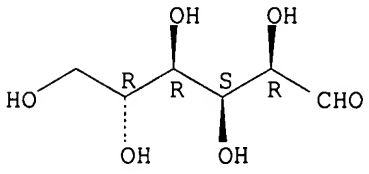
L89 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1989:36258 HCAPLUS
DN 110:36258
TI Interaction of aqueous solutions with grating couplers used as integrated optical **sensors** and their pH behavior
AU Spohn, P. K.; Seifert, M.
CS Inst. Quantum Electron., Swiss Fed. Inst. Technol., Zurich, 8093, Switz.
SO Sensors and Actuators (**1988**), 15(4), 309-24
CODEN: SEACDX; ISSN: 0250-6874
DT Journal
LA English
AB An integrated optical grating **sensor** used as a sensing device is

presented. An outline of the working principle is given, which shows that the effective refractive index N of the guided light wave (mode) is changed either by changing the refractive index of the covering medium above the grating or by adsorbing mols. on the grating. This change in N can be detected very sensitively by the attenuation of the guided mode intensity. Expts. with aqueous urea solns. show that adsorption processes take place at the electrolyte-metal-oxide interface and modify the response to a refractive index change of the **sensor**. **Glucose** does not interact with the surface of the waveguide and therefore acts only through a refractive index change; this could be proved with **flow** measurements and determination of the thickness of the diffusion boundary layer. A comparison of the response of the **sensor** to sodium and ammonia salt solns. shows that ammonia strongly interacts with the waveguide surface and that the waveguide shows a characteristic pH-response. A discussion of these exptl. facts on the basis of the chemical composition of the waveguiding film and the point of zero charge of the metal-oxide surface exposed to an electrolyte is given. The behavior of this grating coupler **sensor** offers the possibility of using it as an optical pH-**probe**.

IT **50-99-7, Glucose**, uses and miscellaneous
RL: USES (Uses)
(integrated optical grating **sensor** response to)

RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

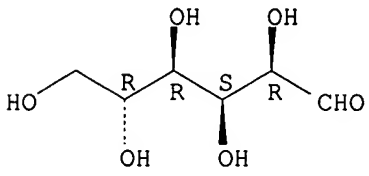


L89 ANSWER 29 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1988:628588** HCAPLUS
DN **109:228588**
TI Continuous amperometric determination of **glucose** using an immobilized enzyme reactor in combination with an immersible **dialysis probe**
AU Mandenius, Carl Fredrik
CS Chem. Cent., Univ. Lund, Lund, S-221 00, Swed.
SO Analytical Letters (**1988**), 21(10), 1817-32
CODEN: ANALBP; ISSN: 0003-2719
DT Journal
LA English
AB **Glucose** was continuously determined by reaction in a packed-bed enzyme reactor containing **glucose** oxidase and catalase. O2 consumption was measured amperometrically with a polarog. Clark electrode. **Glucose** was sampled through a **dialysis probe** immersed in the solution to be measured. An extension of the normal range for the enzyme was achieved by modulating the **flow** rate through the **dialysis probe** and a linear response was obtained in the range of 1.0-60 mM **glucose**. The correlation between the **glucose** transfer and the membrane area of the **dialysis probe** was also studied. Six different membrane were used, all showing variations in the adhesion of yeast **cells**.

IT **50-99-7, Glucose**, biological studies

RL: **ANT (Analyte); ANST (Analytical study)**
(amperometric determination of, in immobilized enzyme reactor, **dialysis probe** in)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L89 ANSWER 30 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
AN **1981:164851** HCAPLUS
DN **94:164851**
TI Chemically sensitive measuring **cell**
IN Koshiishi, Kiyozo; Ono, Noriaki
PA Olympus Optical Co., Ltd., Japan
SO Ger. Offen., 26 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

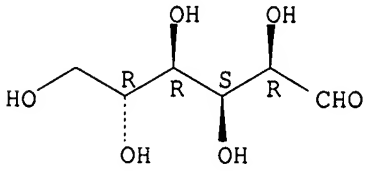
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3020068	A1	19801204	DE 1980-3020068	19800527 <--
	DE 3020068	C2	19831103		
	JP 55158553	A2	19801210	JP 1979-66092	19790530 <--
	JP 56026250	A2	19810313	JP 1979-101321	19790810 <--
	US 4305802	A	19811215	US 1980-147708	19800508 <--
	DE 3050094	C2	19831201	DE 1980-3050094	19800527 <--
PRAI	JP 1979-66092	A	19790530 <--		
	JP 1979-101321	A	19790810 <--		

AB A chemical sensitive measuring **cell** is described, in which a p.d., which develops at the boundary surface between a solution to be studied and an ion-sensitive device corresponding to the concentration of specific ions contained in a solution (such as blood serum), is capable of being attached to an insulated gate of a pH-**probe** designed as an insulating layer-field effect transistor. A change of the source-drainage current of the pH **probe** is used to determine the concentration of the specific ions in the solution The insulated gate of the pH **probe** and the ion-sensitive device are electrochem. connected to each other through a liquid or gel-like material which contains the specific ion. The liquid material is an electrolyte solution, which contains the specific ion toward which the ion-sensitive device is selectively sensitive and which has a fixed pH by using a buffer solution The gel-like material is made of polyacrylamide gel, gelation, poly(vinyl alc.), or agar-agar which contains the special ion. The ion-sensitive device is formed from monactin, valinomycin, or crown compds. which are soluble in nitrobenzene or di-Ph ether and has a coating of either Na aluminosilicate glass, a mixture of AgCl and Ag sulfide, La fluoride, or porous synthetic fibers which are 1st soaked with a solution containing on ion-exchange material mixed with poly(vinyl chloride) and finally dried. A conductive resin connecting the insulated gate and the pH **probe** (e.g. an MOS transistor) to each other contains very finely divided Ag particles. Ag and Pt electrodes are

used in the device. The pH **probe** consists of a gate-insulating layer of SiO2 on which an H+-sensitive layer of Si nitride or Al2O3 is formed. The chemical sensitive layer can be tubelike in form and, if soaked to form a porous gel-like layered support with a combination of polyacrylamide and **glucose** oxidase (to determine **glucose** in the material to be studied), allows the solution to be studied to **flow** through it. Addnl. uses are as a gas **probe** or as a detector element for determining concns. of antigens and antibodies.

IT **50-99-7**, analysis
RL: **ANT (Analyte)**; **ANST (Analytical study)**
(determination of, ion-selective electrode for)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf <<<
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L123 ANSWER 1 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2003-478782 [45] WPIX
DNN N2003-380480 DNC C2003-127859
TI Test strip useful with photometer for determining blood **glucose** concentrations from blood sample, has porous membrane with top surface adhered to substrate bottom surface, and reagent carried on the membrane bottom surface.
DC A89 B04 S03
IN COLE, G W; PHILLIPS, K J
PA (ALLM) ABB DIAGNOSTICS LTD
CYC 1
PI US 6518034 B1 20030211 (200345)* 8 C12Q001-54 <--

ADT US 6518034 B1 **US 1998-104476 19980625**
PRAI **US 1998-104476 19980625**
IC ICM **C12Q001-54**
AB US 6518034 B UPAB: 20030716
NOVELTY - A test strip comprises a substrate with an aperture to receive a blood droplet; a porous membrane with a top surface adhered to the substrate bottom surface so that membrane is in registration with the aperture; and a reagent carried on membrane bottom surface. The membrane interior is free of reagent reacting with **glucose** in blood plasma. The membrane filters red blood **cells** from blood plasma.
USE - For use with a photometer for determining blood **glucose** concentrations from a blood sample.
ADVANTAGE - The invention is inexpensive and easy to use but yields clinically accurate **glucose** concentration values, minimizes the occurrence of incomplete reactions or reaction gradients, thus resulting in more accurate blood **glucose** readings.
DESCRIPTION OF DRAWING(S) - The figure shows an exploded view of the test strip.
Substrate 20
Membrane 40
Reagent 50
Dwg.1/5
FS CPI EPI
FA AB; GI; DCN
MC CPI: A12-L04B; A12-V03C2; A12-W11A; B04-B04D5; B04-C03; B04-L03A; B04-L03B; B10-A07; B10-B01A; B11-C07B2; **B11-C08D3**; B11-C08E3; B12-K04A
EPI: S03-E04A5B; S03-E04A5L; S03-E09E; S03-E13D; S03-E14H1
TECH UPTX: 20030716
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The substrate (20) is pantone 420C.

TECHNOLOGY FOCUS - POLYMERS - Preferred Component: The membrane (40) is made of a polymeric matrix having columnar pores. It is made of a material from polyethersulfone or acetate. The reagent (50) comprises peroxidase suspended in a polymeric matrix of polymer resin emulsion of vinyl acetate ethylene copolymer and polyvinyl acetate. Preferred Property: The membrane has a pore size of 0-1200 microns.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Component: The reagent includes chromophore(s) and enzyme(s) including **glucose** oxidase and peroxidase. It includes 3,3',5,5' tetramethyl benzidine, and **glucose** oxidase.

L123 ANSWER 2 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2002-521657 [56] WPIX
DNN N2002-412797 DNC C2002-147760
TI Determining concentration of analyte in body fluid, useful for monitoring **glucose** or lactate, by enzymatic oxidation, with oxygen supplied as a solution.
DC B04 D16 P31
IN PFEIFER, B; PFEIFFER, B
PA (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE
CYC 26
PI EP 1212978 A2 20020612 (200256)* GE 4 A61B005-00 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
DE 10060589 A1 20020627 (200256) A61B005-145 <--
DE 10060589 B4 20040212 (200412) A61B005-145 <--
ADT EP 1212978 A2 EP 2001-128778 20011203; DE 10060589 A1 **DE**

2000-10060589 20001206; DE 10060589 B4 **DE 2000-10060589 20001206**
PRAI **DE 2000-10060589 20001206**
IC ICM **A61B005-00**; **A61B005-145**
ICS **C12Q001-54**; G01N033-48
AB EP 1212978 A UPAB: 20020903
NOVELTY - In a method for determining the concentration of a substance (I) in a biological fluid by enzymatic oxidation, the new feature is that the necessary oxygen is supplied using a solvent that has high capacity for absorbing gases in physically dissolved form.
USE - The method is especially used to detect (monitor) **glucose** and lactate in tissue fluids, particularly subcutaneous tissue.
ADVANTAGE - The method ensures supply of enough oxygen for complete conversion of (I). Supplying oxygen in dissolved form avoids cavitation and other interfering effects caused by gas bubbles, and ensures rapid removal of gas from the system.
DESCRIPTION OF DRAWING(S) - Diagram of the device for monitoring substances in body tissue.
Microdialysis probe 2
Tube supplying **perfusion** fluid to the **probe** 4
Tube for removing **dialyzate** from the **probe** 5
Measuring **sensor** 6
Enzyme **reservoir** 7
T-piece for adding enzyme solution to **dialyzate** stream 8
Peristaltic pump 1
Dwg.1/1
FS CPI GMPI
FA AB; GI; DCN
MC CPI: B04-B04L; B04-L01; B10-A07; B10-C04D; B11-C08E3; B12-K04A; D05-A02A; D05-C08; D05-H09
TECH UPTX: 20020903
TECHNOLOGY FOCUS - BIOLOGY - Preferred Process: To sample (I) from an organism, a **microdialysis probe** in implanted in tissue, supplied with **perfusion** liquid and, after enrichment with (I) present in the tissue fluid, recovered as **dialyzate**. Especially the oxygen-containing solvent is added with the enzyme to the **dialyzate** and/or **perfusion** stream.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Solvent: This is a fluorocarbon or perfluoro compound able to carry oxygen (it dissolves 20-30 times more oxygen than water), particularly in emulsified form.

L123 ANSWER 3 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2002-435494 [46] WPIX
DNN N2002-342804 DNC C2002-123707
TI Process for determination of **glucose** level in human body, especially diabetic patients, involves maintaining static **glucose** level at skin surfaces over period of time, and measuring **glucose** level of skin.
DC B04 P31
IN BERMAN, H L; BLAIR, R N; ROE, J N
PA (MEDO-N) MEDOPTIX INC; (BERM-I) BERMAN H L; (BLAI-I) BLAIR R N; (ROEJ-I) ROE J N
CYC 97
PI WO 2002032303 A2 20020425 (200246)* EN 19 A61B005-00 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO
RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2002030395	A	20020429	(200255)		A61B005-00	<--
US 6522903	B1	20030218	(200317)		A61B005-00	<--
US 2003105391	A1	20030605	(200339)		A61B005-00	<--
JP 2004511285	W	20040415	(200426)	34	A61B005-145	<--
AU 2002230395	B2	20050224	(200520)		A61B005-00	<--

ADT WO 2002032303 A2 WO 2001-US42570 20011009; AU 2002030395 A AU 2002-30395 20011009; US 6522903 B1 **US 2000-693202 20001019**; US 2003105391 A1 **Cont of US 2000-693202 20001019**, US 2003-336254 20030102; JP 2004511285 W WO 2001-US42570 20011009, JP 2002-535543 20011009; AU 2002230395 B2 AU 2002-230395 20011009

FDT AU 2002030395 A Based on WO 2002032303; US 2003105391 A1 Cont of US 6522903; JP 2004511285 W Based on WO 2002032303; AU 2002230395 B2 Previous Publ. AU 2002230395, Based on WO 2002032303

PRAI **US 2000-693202 20001019**; US 2003-336254 20030102

IC ICM **A61B005-00**; **A61B005-145**
ICS G01N001-10; G01N021-00; G01N021-35; G01N021-41; G01N021-47; G01N021-64; G01N021-65; G01N027-416; G01N033-483; **G01N033-66**

AB WO 200232303 A UPAB: 20020722
NOVELTY - **Glucose** level of a human body is determined by maintaining a static level of **glucose** at the skin surfaces over a period of time, and measuring the **glucose** level in the skin surface.
USE - For measuring blood **glucose** level in diabetic patients.
ADVANTAGE - The method enables reproducible and accurate measurement of blood **glucose** level, without using blood samples. The method is simple and non-invasive.
Dwg.0/4

FS CPI GMPI

FA AB; DCN

MC CPI: B10-A07; B11-C07B1; B11-C07B2; B11-C07B3; B11-C08B; B12-K04A

TECH UPTX: 20020722
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Process: The measuring further comprises extracting a sample from the skin surface and measuring the **glucose** level from the sample. The extraction step is selected from blister suction, wick extraction, **microdialysis** extraction, iontophoretic extraction, sontophoretic extraction or chemically enhanced extraction. The measuring step comprises using electrochemical **sensors** (preferably **glucose electrodes**), optochemical **sensors** (preferably colorimetric strips), or spectroscopy. The spectroscopy is selected from near-infrared, Raman, photoacoustic, fluorescent or polarization spectroscopy. The measuring step may also comprise measuring a refractive index or scatter changes of the sample.

L123 ANSWER 4 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

AN 2002-197515 [26] WPIX

DNN N2002-150056 DNC C2002-061212

TI **Microdialysis** arrangement has a conveying device with a pressure pumping unit connected on the pressure side to the inlet of the **probe** channel and a suction pumping unit arranged on the suction side to the outlet of the channel.

DC B04 J04 P31 P34 S03

IN HOERAUF, C; ROEPER, J; SCHOEMAKER, M

PA (HOFF) **ROCHE DIAGNOSTICS GMBH**; (HOFF) **HOFFMANN LA ROCHE & CO AG F**; (HOER-I) HOERAUF C; (ROEP-I) ROEPER J; (SCHO-I) SCHOEMAKER M; (HOFF) **ROCHE DIAGNOSTICS CORP**

CYC 28
PI EP 1177759 A1 20020206 (200226)* GE 8 A61B005-00 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
DE 10038835 A1 20020228 (200226) A61M001-14
JP 2002126074 A 20020508 (200234) 6 A61M001-14
US 2002082490 A1 20020627 (200245) A61B005-00 <--
US 6591126 B2 20030708 (200353) A61B005-00 <--
EP 1177759 B1 20041020 (200469) GE A61B005-00 <--
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
DE 50104184 G 20041125 (200477) A61B005-00 <--
ES 2230215 T3 20050501 (200532) A61B005-00 <--
DE 10038835 B4 20050707 (200545) A61M001-16
ADT EP 1177759 A1 EP 2001-116277 20010705; DE 10038835 A1 **DE 2000-10038835 20000804**; JP 2002126074 A JP 2001-229622 20010730; US 2002082490 A1 US 2001-910452 20010720; US 6591126 B2 US 2001-910452 20010720; EP 1177759 B1 EP 2001-116277 20010705; DE 50104184 G DE 2001-00104184 20010705, EP 2001-116277 20010705; ES 2230215 T3 EP 2001-116277 20010705; DE 10038835 B4 **DE 2000-10038835 20000804**
FDT DE 50104184 G Based on EP 1177759; ES 2230215 T3 Based on EP 1177759
PRAI **DE 2000-10038835 20000804**
IC ICM **A61B005-00**; A61M001-14; A61M001-16
ICS **A61B005-05**; **A61B005-145**; A61M001-00; A61M001-20; A61M031-00; A61M037-00; G01N001-00; G01N001-10; G01N027-416; **G01N033-487**
AB EP 1177759 A UPAB: 20020424
NOVELTY - **Microdialysis** arrangement comprise a **probe** inserted into an organic tissue; a **sensor cell** for electrochemically acquiring the contents, especially **glucose** in the **perfusion** fluid removed from the **probe**; and a conveying device for conveying the **perfusion** fluid through the **probe** channel of the **probe** to the **sensor cell**. The conveying device has a pressure pumping unit and a suction pumping unit.
DETAILED DESCRIPTION - **Microdialysis** arrangement comprise a **probe** (12) inserted into an organic tissue (10); a **sensor cell** (14) for electrochemically acquiring the contents, especially **glucose** in the **perfusion** fluid removed from the **probe**; and a conveying device (16) for conveying the **perfusion** fluid through the **probe** channel (18) of the **probe** to the **sensor cell**. The conveying device has a pressure pumping unit (30) connected on the pressure side to the inlet (20) of the **probe** channel and a suction pumping unit (31) arranged on the suction side to the outlet (24) of the channel and operated simultaneously with the pressure pumping unit.
USE - Used in **dialysis**.
ADVANTAGE - The arrangement is reliable.
DESCRIPTION OF DRAWING(S) - The drawing shows a schematic view of the **microdialysis** arrangement.
organic tissue 10
probe 12
sensor cell 14
conveying device 16
probe channel 18
inlet of **probe** channel 20
outlet of **probe** channel 24
suction pumping unit 31
line 36, 38
reagent pumping unit 44
Dwg.1/1

FS CPI EPI GMPI
FA AB; GI
MC CPI: B11-C04; J04-B01
EPI: S03-E14H
TECH UPTX: 20020424
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Features: The pressure pumping unit is connected on the pressure side to the inlet and the suction pumping unit on the suction side to the outlet of the **probe** channel. The pressure pumping unit and the suction pumping unit are connected to the **probe** channel via a line (36, 38) formed by a tube. The arrangement further comprises a reagent pumping unit (44) for dosing of reagent solution, especially an enzyme solution in the **perfusion** solution upstream of the **sensor cell**
.

L123 ANSWER 5 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2001-357941 [38] WPIX
DNN N2001-260206 DNC C2001-111086
TI System for extrapolating **glucose** levels and calculating and administering required insulin quantities.
DC B04 J04 P31 T01
IN **HOSS, U**; KALATZ, B
PA (HOFF) **ROCHE DIAGNOSTICS GMBH**; (BOEF) BOEHRINGER MANNHEIM GMBH
CYC 28
PI EP 1102194 A2 20010523 (200138)* EN 15 G06F019-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
DE 10057215 A1 20010523 (200138) A61B005-00 <--
JP 2001204817 A 20010731 (200148) 11 A61M005-00
JP 3594897 B2 20041202 (200480) 16 A61M001-36
US 6925393 B1 20050802 (200550) G06F019-00
ADT EP 1102194 A2 **EP 2000-124780 20001114**; DE 10057215 A1 **DE 2000-10057215 20001117**; JP 2001204817 A **JP 2000-351415 20001117**; JP 3594897 B2 **JP 2000-351415 20001117**; US 6925393 B1 **US 2000-711855 20001113**
FDT JP 3594897 B2 Previous Publ. JP 2001204817
PRAI **DE 1999-19955734 19991118**
IC ICM **A61B005-00**; A61M001-36; A61M005-00; G06F019-00
ICS **A61B005-15**; G01N031-00; G01N033-48; **G01N033-66**; G01N035-00
AB EP 1102194 A UPAB: 20010711
NOVELTY - A system for the extrapolation of a **glucose** concentration, is new.
DETAILED DESCRIPTION - A system for the extrapolation of a **glucose** concentration, is new. It comprises:
(a) a data input device (El) for entering insulin doses administered (li) and their times of administration (ti);
(b) the same or a second data input device (EK) for entering carbohydrates (KHj) consumed or to be consumed, and their times of consumption (tj);
(c) a unit (GM) for determining the actual **glucose** concentration (Ga) in a patient's bodily fluid at a specific point in time (ta);
(d) a memory unit (M) for storing administered insulin doses and their times of administration, and carbohydrates consumed and their times of consumption; and
(e) an evaluation device (CPU) for evaluating the data stored in the memory unit and extrapolating a **glucose** concentration at a point in time (tp), where tp is after ta.
The extrapolation comprises:

(a) determining the portion (I(wirk)) of insulin doses that take effect within the interval between ta and tp;
(b) determining the portion KH(wirk) of carbohydrates consumed that take effect in the interval between ta and tp; and
(c) determining an extrapolated **glucose** concentration Gp at the point in time tp with consideration for I(wirk) and KH(wirk).
USE - The system is used to establish **glucose** levels in patients and to calculate and administer the appropriate insulin concentration (claimed).
Dwg.0/5

FS CPI EPI GMPI
FA AB; DCN
MC CPI: B04-J03A; B10-A07; B11-C04; B11-C08; B12-K04A; J04-B01
EPI: T01-J
TECH UPTX: 20010711
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred System: Gp is determined at tp using the formula: Gp=Ga - IwirkxDxSE + KHwirkxE +X.
D = empirical weighting factor;
SE = patient's insulin sensitivity;
E = a factor, preferably RKHxF;
RKH = carbohydrate reduction factor;
F = an empirical factor;
X = IbasalxSExC or SGxA;
Ibasal = patient's basal insulin demand over 24 hours;
SE = patient's insulin sensitivity;
C and A = empirical weighting factors; and
SG = slope of **glucose** concentration at ta.
The quantity of insulin to be administered is calculated at intervals of 1-30 minutes. The system contains a display unit for displaying the insulin dose to be administered. The system also contains a **microdialysis** catheter, with an integrated administration unit for administering a calculated insulin dose. A query unit performs a query to determine if a certain insulin dose should be administered and with which the user releases the administration of insulin.

L123 ANSWER 6 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2001-161125 [17] WPIX
DNN N2001-117478 DNC C2001-048220
TI Determining **glucose** content of body fluid using **microdialysis** system with measurement **cell** to register the **perfusate glucose** content linked to a **control** to match body fluid **glucose** content automatically.
DC B04 P31
IN **FUSSGAENGER, R; GESSLER, R; HOSS, U; PFLEIDERER, H; ZIETEN, H**
PA (HOFF) **ROCHE DIAGNOSTICS GMBH**; (BOEF) BOEHRINGER MANNHEIM GMBH; (FUSS-I) FUSSGAENGER R; (GESS-I) GESSLER R; (HOSS-I) HOSS U; (PFLE-I) PFLEIDERER H; (ZIET-I) ZIETEN H
CYC 27
PI EP 1072222 A2 20010131 (200117)* GE 9 A61B005-00 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
DE 19935165 A1 20010201 (200117)
JP 2001066313 A 20010316 (200121) 8 G01N033-66 <--
EP 1072222 B1 20040602 (200441) GE A61B005-00 <--
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
DE 50006664 G 20040708 (200445) A61B005-00 <--
US 2004191848 A1 20040930 (200465) C12Q001-54 <--
US 6852500 B1 20050208 (200511) C12Q001-54 <--

ADT EP 1072222 A2 **EP 2000-115207 20000713**; DE 19935165 A1 **DE 1999-1035165 19990728**; JP 2001066313 A **JP 2000-217432 20000718**; EP 1072222 B1 **EP 2000-115207 20000713**; DE 50006664 G **DE 2000-00006664 20000713, EP 2000-115207 20000713**; US 2004191848 A1 **Div ex US 2000-620038 20000720, US 2004-782290 20040219**; US 6852500 B1 **US 2000-620038 20000720**

FDT DE 50006664 G Based on EP 1072222

PRAI **DE 1999-19935165 19990728**

IC ICM **A61B005-00**; **C12Q001-54**; **G01N033-66**
ICS **G01N033-487**

AB EP 1072222 A UPAB: 20010328
NOVELTY - Determination of **glucose** concentration in a body fluid, especially tissue fluid, comprises passing a **perfusate** containing **glucose** through a **microdialysis probe** (10) where a measurement **cell** (16) generates a signal corresponding to the **glucose** content. The starting **glucose** level in the **perfusate** is aligned with the **glucose** content of the body fluid by a **control** system (18,20) according to a guide value derived from **cell** (16) signals.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for an apparatus to determine the **glucose** content in a body fluid with a **control** system (18,20) to align the starting **glucose** content in the **perfusate** with the body fluid **glucose** content, according to measurement signals from a measurement **cell** (16).

Preferred Features: An evaluation unit (22) determines the actual starting **glucose** content in the **perfusate** on insignificant **control** deviations, as a measure for the body fluid **glucose** content. The **perfusion** assembly has a supply (12) of **perfusate** and a system (14) to feed the **perfusate** preferably in intervals. The **perfusate** supply station (12) has at least two dedicated **reservoirs** (32,34) holding **perfusion** fluids (36,38) with different **glucose** concentrations. The first **reservoir** (32) holds a **perfusion** fluid (36) which is free of **glucose**, and the second **reservoir** (34) contains a **perfusion** fluid (38) with **glucose**. The **control** system has a flow mixer (20), preferably as a mixing **valve** or a cycled path **valve**, to set the starting **glucose** content in the **perfusate**. Connections for linking channels to the **reservoirs** (32,34) with **perfusion** fluids are at the inflow side of the mixing **valve** (20), to take the separate flows, and a channel (26) at the outflow side carries the mixed **perfusion** fluid to the **microdialysis probe** (10).

USE - The system is for setting the **glucose** content in a **perfusion** fluid, for **microdialysis** and the like.

ADVANTAGE - The operation prevents fluctuations in the **glucose** content in the body fluid, giving an accurate **glucose** measurement with a reduced **dialysis** time. The **glucose** content level is set by automatic adjustments, adaptively to the body fluid.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of the **microdialysis** system.

microdialysis probe 10
perfusion fluid supply station 12
perfusion fluid feed 14
measurement **cell** 16

digital micro **controller** 18
flow mixer 20
evaluation unit 22
feed channel for the mixed **perfusion** fluid 26
perfusion fluid **reservoirs** 32,34
perfusion fluids 36,38
Dwg.1/2
FS CPI GMPI
FA AB; GI; DCN
MC CPI: B10-A07; **B11-C08D3**; B12-K04A
TECH UPTX: 20010328
TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Process: In the event of an insignificant **control** deviation, the actual starting **glucose** content in the **perfusate** is taken as the measure of the body fluid **glucose** content. The starting **glucose** content level is taken from the adjustment value given by the setting unit (20) of the **control** system (18,20). The **glucose** content is measured before the **perfusate** is passed into the **microdialysis probe** (10). The starting **glucose** content level in the **perfusate** may be set by the mixture of two flows from separate **reservoirs** (32,34) containing prepared **perfusion** fluids (36,38) with different **glucose** concentrations. The **perfusate** is passed through the **microdialysis probe** (10) in alternating and successive movement and **dialysis** intervals, and at different flow speeds. The flow speed is faster in the movement interval than in the **dialysis** interval. During the movement interval, the flow speed is increased to a level where the starting **glucose** content level is maintained during the passage through the **microdialysis probe** (10). During the **dialysis** interval, the forward flow movement is interrupted or the flow speed is reduced so that the **glucose** content in the **dialysate** is close to the **glucose** content of the body fluid. The guide value is determined by integration or differentiation of the timed profile of the measurement signals. Or it is derived through a quantitative recognition of the signal peaks in the timed profile of the measurement signals. The guide value can also be registered by a comparison of the actual measurement signal profile with calibrated signal patterns stored in memory. The guide value is also shown by the peak value of the signal profile during each movement interval. The guide value, according to the **glucose** content (c) of the body fluid, meets the following expression (I):
Sg = the peak value of the measurement signals during the movement interval;
S0 = the baseline value of the measurement signals during the movement interval;
c0 = the actual starting **glucose** content level in the **perfusate**; and
a, b = empirically determined correction factors to compensate for diffusion and mixing effects and residual recovery effects during a movement interval.
The starting **glucose** level in the **perfusate** is given a changeable **control** through a dual-point **control** action, where the **control** deviation is varied around a given setting value for the starting **glucose** content in the **perfusate**.

TECHNOLOGY FOCUS - COMPUTING AND **CONTROL** - The **control** system incorporates a digital **microcontroller**, at the evaluation unit.

L123 ANSWER 7 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2001-160510 [17] WPIX
DNN N2001-116948 DNC C2001-048006
TI Polarimetric and/or infrared spectrometric **glucose** assay includes removing proteins from a body fluid sample by **dialysis**.
DC A89 B04 J04 P31 P34 S02 S03 S05 W05
IN BARNIKOL, W; POETZSCHKE, H; VEECK, M; ZIRK, K
PA (GLUK-N) GLUKOMEDITECH AG
CYC 1
PI DE 19911265 A1 20000928 (200117)* 17 A61B005-145 <--
DE 19911265 C2 20011213 (200201) A61B005-145 <--
ADT DE 19911265 A1 **DE 1999-1011265 19990313**; DE 19911265 C2 **DE 1999-1011265 19990313**
PRAI **DE 1999-19911265 19990313**
IC ICM **A61B005-145**
ICS A61M001-14; G01N021-21; G01N021-35; G01N033-483
AB DE 19911265 A UPAB: 20010328
NOVELTY - Assay for determining the **glucose** concentration in a body fluid sample comprises removing proteins from the sample by **dialysis** and introducing the sample into a measurement chamber for **glucose** determination by polarimetry and/or infrared spectrometry.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for performing the assay, comprising:
(i) a measurement chamber;
(ii) a polarimetric detection system comprising a light source, a detector and devices for deflecting the measuring beam;
(iii) a spectrometric detection system comprising a light source and a detector; and
(iv) devices for amplifying the measurement signals.
USE - The assay is useful for monitoring **glucose** levels in diabetics, especially using an implantable device with telemetric data transmission.
DESCRIPTION OF DRAWING(S) - The figure shows a **sensor** suitable for performing the assay, comprising a measurement chamber (MK), a polarization light source (QP) and detector (DP), and an infrared source (QS) and detector (DS), where two opposite walls of the measurement chamber comprise **microdialysis** membranes (MM).
Dwg.1/8
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: A12-V03C2; B11-C08E; B12-K04A; J04-B01
EPI: S02-K08A; S03-A02B; S03-A02C; S03-E04A5; S03-E04A5B; S03-E04B5; S05-D01G; W05-D03C
TECH UPTX: 20010328
TECHNOLOGY FOCUS - POLYMERS - Preferred Procedure: **Dialysis** is preferably performed using a membrane of surface-modified polysulfone, cellulose acetate or modified cellulose.

L123 ANSWER 8 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2000-524466 [47] WPIX
DNN N2000-387661 DNC C2000-155797
TI System for self-monitoring blood **glucose** by diabetics, etc. comprising communicating **sensor** and display components.
DC B04 B07 P31
IN CONN, T E; FORD, R; POTTS, R O; SONI, P L; TAMADA, J A; TIERNEY, M J
PA (CYGN-N) CYGNUS INC
CYC 91
PI WO 2000047109 A1 20000817 (200047)* EN 53 A61B005-00 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

AU	2000033630	A	20000829	(200062)		A61B005-00	<--
EP	1135052	A1	20010926	(200157)	EN	A61B005-00	<--
	R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE						
JP	2002536103	W	20021029	(200274)	61	A61B005-145	<--
US	6561978	B1	20030513	(200335)		A61B005-00	<--
US	2003144581	A1	20030731	(200354)		A61B005-00	<--

ADT WO 2000047109 A1 **WO 2000-US3693 20000211**; AU 2000033630 A **AU 2000-33630 20000211**; EP 1135052 A1 **EP 2000-911792 20000211, WO 2000-US3693 20000211**; JP 2002536103 W **JP 2000-598064 20000211, WO 2000-US3693 20000211**; US 6561978 B1 **Provisional US 1999-119918P 19990212, US 2000-503227 20000211**; US 2003144581 A1 **Provisional US 1999-119918P 19990212, Cont of US 2000-503227 20000211**, US 2003-353400 20030129

FDT AU 2000033630 A Based on WO 2000047109; EP 1135052 A1 Based on WO 2000047109; JP 2002536103 W Based on WO 2000047109; US 2003144581 A1 Cont of US 6561978

PRAI **US 1999-119918P 19990212; US 2000-503227 20000211**; US 2003-353400 20030129

IC ICM **A61B005-00; A61B005-145**
ICS G01N027-327; G01N027-416; G01N033-48; G01N033-483; G01N033-49; G01N033-50; **G01N033-66**; G01N033-72; G01N033-84; G01N033-92

AB WO 200047109 A UPAB: 20000925
NOVELTY - A system with two communicating components where the first component has a sampling mechanism for extracting an analyte across a skin or mucosal surface of a biological system, a sensing mechanism producing a signal due to contact with the extracted analyte and a mechanism communicating with an interface of the second component, is new.
DETAILED DESCRIPTION - The sampling may be by iontophoresis, electro-osmosis, sonophoresis, **microdialysis**, suction or passive diffusion. One of the components computes the quantity of the analyte from the signal and the result is displayed by the second component. The components are connected by a wire-like connection, capacitive, acoustic, infrared or inductive coupling, or using electromagnetic waves in the range 1 Hz to 5 GHz. The second component has a memory. The two components may communicate with an implanted insulin pump, a modem or a personal computer linked to a wide area network.
USE - Self-monitoring of blood **glucose** by diabetics.
ADVANTAGE - The separation of the components gives greater flexibility and convenience to the user.
DESCRIPTION OF DRAWING(S) - The diagram shows a 2 component monitoring system comprising an analyte detector a credit card-sized display device.
Dwg.1H/1

FS CPI GMPI
FA AB; GI; DCN
MC CPI: B11-C04; B11-C08C; B12-K04A; B12-K04A6; B12-K04E; B14-S04

L123 ANSWER 9 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1999-551231 [46] WPIX
DNN N1999-407898 DNC C1999-160875
TI Catheter for insertion into blood vessel to detect substances in coronary sinus related to metabolic changes in heart.
DC B04 P31 P34
IN FRANCO-CERECEDA, A; LISKA, J
PA (FRAN-I) FRANCO-CERECEDA A; (LISK-I) LISKA J

CYC 85
PI WO 9945982 A2 19990916 (199946)* EN 28 A61M001-20 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD
GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
UA UG US UZ VN YU ZW
SE 9800791 A 19990912 (199951) A61M001-20 <--
SE 9804081 A 19990912 (199951) A61B005-14 <--
AU 9928635 A 19990927 (200006) A61M001-20 <--
SE 511932 C2 19991220 (200006) A61B005-14 <--
SE 511933 C2 19991220 (200006) A61B005-14 <--
EP 1061969 A2 20001227 (200102) EN A61M001-20 <--
R: AT BE CH DE DK ES FI FR GB IT LI NL
US 6264627 B1 20010724 (200146) A61M001-00
US 2001015253 A1 20010823 (200151) B32B031-18
US 6632315 B2 20031014 (200368) B29C047-00
ADT WO 9945982 A2 **WO 1999-SE259 19990224**; SE 9800791 A **SE 1998-791 19980311**; SE 9804081 A **SE 1998-4081 19981126**; AU 9928635 A **AU 1999-28635 19990224**; SE 511932 C2 **SE 1998-4081 19981126**; SE 511933 C2 **SE 1998-791 19980311**; EP 1061969 A2 **EP 1999-909435 19990224, WO 1999-SE259 19990224**; US 6264627 B1 **US 1998-76808 19980513**; US 2001015253 A1 **Div ex US 1998-76808 19980513**, US 2001-826956 20010406; US 6632315 B2 **Div ex US 1998-76808 19980513**, US 2001-826956 20010406
FDT AU 9928635 A Based on WO 9945982; EP 1061969 A2 Based on WO 9945982
PRAI **SE 1998-4081 19981126; SE 1998-791 19980311**
IC ICM **A61B005-14**; A61M001-00; A61M001-20; B29C047-00; B32B031-18
ICS A61M025-00; B32B031-04
AB WO 9945982 A UPAB: 19991110
NOVELTY - Catheter (1) has at least two channels (23,24) for **microdialysis** solution, connected to each other so that the solution can flow from one channel to the other.

DETAILED DESCRIPTION - Catheter (1) has at least two channels (23,24) for **microdialysis** solution, connected to each other so that the solution can flow from one channel to the other. The catheter body (2), at a distance form its distal end, has an opening (25) formed by cutting away part of the catheter body in the channel (23) region. Thus a section of the channel (23) is opened forming a chamber (26) provided with a **microdialysis** membrane (30). The catheter is connected to an external device (10) for circulating and monitoring/analyzing the **dialysis** solution.

The concentration of at least one substance in a group consisting both of metabolic markers, such as ASAT, ALAT CK/CK-B, troponin-T and troponin-I, and substances such as lactate, pyruvate, **glucose**, glycerol, urea, aspartate, glutamate, myoglobin, hypoxanthines and peptides in a sample of **dialysis** solution obtained by **microdialysis** of blood in the coronary sinus, is measured and compared with reference concentration.

USE - For insertion into a blood vessel and for detection of substances in a heart to indicate metabolic changes in a heart.

ADVANTAGE - Accurate and rapid response to the presence of certain substances in the blood is ensured. The device is robust, simple to insert and has a simple construction.

DESCRIPTION OF DRAWING(S) - The drawing shows a diagrammatic view of a catheter
Catheter 1
Catheter body 2

Circulating and monitoring-analyzing device 10
Channels 23,24
Opening 25
Microdialysis chamber (30) Membrane (26
Dwg.1/7
FS CPI GMPI
FA AB; GI; DCN
MC CPI: B04-B04D5; B04-C01; B04-N04; B06-D09; B10-A07; B10-A13B; B10-B02J; B11-C04B; B11-C08E; B12-K04A

L123 ANSWER 10 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1999-527294 [44] WPIX
DNN N1999-390595 DNC C1999-154829
TI Implantable chemical **sensor** uses **microdialyis** techniques to measure concentration of chemical or gas in body fluid.
DC B04 D16 P31 S05
IN TOWE, B C
PA (UYAR-N) UNIV ARIZONA STATE
CYC 23
PI WO 9939629 A1 19990812 (199944)* EN 66 A61B005-00 <--
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: CA JP KR MX US
ADT WO 9939629 A1 **WO 1999-US2493 19990204**
PRAI **US 1998-73653P 19980204; US 1998-73651P 19980204; US 1998-73652P 19980204**
IC ICM **A61B005-00**
AB WO 9939629 A UPAB: 19991026
NOVELTY - A new sensing system for determining the presence of a target chemical in a test fluid comprising a **sensor** that has a microflow **reservoir** (10a) for a reagent fluid which reacts with a target chemical.
DETAILED DESCRIPTION - The system includes a thermopile (80) for detecting the occurrence of the reaction. Reagent fluid is conducted from the **reservoir** to the thermopile via a conduit (50). The sensing system is capable of being immersed within the test fluid.
USE - For measuring the concentration of a chemical or gas dissolved in a fluid, especially for monitoring **glucose** levels in blood to treat diabetes.
ADVANTAGE - The system is stable over long time periods.
DESCRIPTION OF DRAWING(S) - The figure shows a schematic of a sensing system.
reservoir for reagent fluid 10a
reservoir for calibration fluid 10b
collapsible bags 20,21
resistance tubing 30
connecting conduit 50
thermopile 80
hollow membrane filter 90
waste **reservoir** 140
Dwg.1/16
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: B04-B04D5; B04-L0300E; B04-L03A; B04-L03D; B04-L0400E; B04-L05; B04-L05A; B04-L05B; B04-L05C; B05-C08; B10-A07; B11-C08E3; B12-K04A; D05-A01A; D05-A01B; D05-A02A; D05-H09
EPI: S05-D01G
TECH UPTX: 19991026
TECHNOLOGY FOCUS - CHEMICAL ENGINEERING - In the illustrated embodiment, the thermopile **sensor** has a number of sensing junctions and a number of reference junctions. A hollow membrane filter (90) is positioned

adjacent each sensing junction. One end of the membrane filter is connected to the conduit (50) for receiving fluid from the microflow **reservoir** (10a), and the other end is connected to a waste **reservoir** (140). The membrane fiber has a porosity permitting passage of the target chemical from the test fluid while preventing passage of the sensing substance from the reagent fluid. The reagent fluid may include a catalyst, e.g. an enzyme which reacts with the target chemical to provide heat proportional to the concentration of target chemical. Suitable enzymes include **glucose** oxidase, catalase, hexokinase, **glucose** dehydrogenase, cholesterol oxidase, lactase, urate oxidase, trypsin, apyrase, and penicillinase. A further microflow **reservoir** (10b) may contain a calibration compound, e.g. hydrogen peroxide, catalase, **glucose**, or target chemical. The hollow membrane filter may be a semipermeable **dialysis** membrane whose outer surface is in thermal contact with the sensing junctions. It may be made of acetate, polysulfone, polyacrylonitrile, or cellulose. Preferably the **reservoir** (10a,10b) is a collapsible bag (20,21) held at positive pressure and housing the reagent fluid. A resistance tubing (30) has an open end immersed in the reagent to create sufficient resistance to **control** the flow rate of the reagent. In an alternative arrangement, the **sensor** has an optical **cell** which measures a change in the optical properties of the reagent when contacted with the target chemical.

ABEX UPTX: 19991026
WIDER DISCLOSURE - The **sensor** can be implanted in the patient.

L123 ANSWER 11 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1998-009830 [02] WPIX
DNN N1998-007638 DNC C1998-003684
TI Tissue **glucose** concentration monitor - uses a **perfusion** solution from an implanted **micro dialysis** **probe** and an external measurement **cell**.
DC B04 J04 P31 P34
IN **HOSS, U**; PFEIFFER, E F; PFEIFFER, M
PA (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE; (BOEF) BOEHRINGER MANNHEIM GMBH; (HOFF) **ROCHE DIAGNOSTICS GMBH**; (PFEI-I) PFEIFFER M
CYC 20
PI DE 19618597 A1 19971120 (199802)* 6 A61B005-00 <--
WO 9742868 A1 19971120 (199802) A61B005-00 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
EP 898459 A1 19990303 (199913) GE A61B005-00 <--
R: AT CH DE DK ES FR GB IT LI NL SE
US 6091976 A 20000718 (200037) A61B005-05 <--
JP 2000510588 W 20000815 (200044) 18 G01N033-66 <--
US 6434409 B1 20020813 (200255) A61B005-05 <--
DE 19618597 B4 20050721 (200548) A61B005-00 <--
ADT DE 19618597 A1 **DE 1996-1018597 19960509**; WO 9742868 A1 **WO 1997-EP1075 19970304**; EP 898459 A1 **EP 1997-908169 19970304, WO 1997-EP1075 19970304**; US 6091976 A **WO 1997-EP1075 19970304, US 1998-147207 19981028**; JP 2000510588 W **JP 1997-540418 19970304, WO 1997-EP1075 19970304**; US 6434409 B1 **Div ex WO 1997-EP1075 19970304, Div ex US 1998-147207 19981028, US 2000-588231 20000606**; DE 19618597 B4 **DE 1996-1018597 19960509**
FDT EP 898459 A1 Based on WO 9742868; US 6091976 A Based on WO 9742868; JP 2000510588 W Based on WO 9742868; US 6434409 B1 Div ex US 6091976
PRAI **DE 1996-19618597 19960509**
IC ICM **A61B005-00; A61B005-05; G01N033-66**

ICS A61M001-14; A61M005-14; **G01N033-487**

AB DE 19618597 A UPAB: 20021001
To monitor the concentration of **glucose** in tissue, a **perfusion** solution (18) forms a liquid column by flowing through a **micro dialysis probe** (12) implanted in the tissue (10) to a pref. external measurement **cell** (14) which generates continuous measurement signals. The volume flow of the **perfusion** solution (18) is reduced (V0) by time for the **dialysis** intervals (T1). During a **dialysis** interval (T1), the volume **perfused** through the **micro dialysis probe** (12) is increased to a higher volume flow (V1) to the measurement **cell** (14).
USE - The technique gives a monitor action on the blood pressure of a diabetic patient through the relationship between the **glucose** concentration in tissue and the blood pressure level.
ADVANTAGE - The system determines the **glucose** level reliably and with a high accuracy.
Dwg.1,2/2

FS CPI GMPI

FA AB; GI; DCN

MC CPI: B04-B04D4; B10-A07; B11-C08E; B12-K04A; J04-B01

L123 ANSWER 12 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

AN 1997-481582 [45] WPIX

DNN N1997-401412 DNC C1997-153164

TI Apparatus and process for determination of metabolite concentration in tissue - used for long-term observation of blood sugar levels in diabetic patients..

DC B04 D16 J04 P31 P34

IN **HOSS, U**; PFEIFFER, E F

PA (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE; (PFEI-I) PFEIFFER M

CYC 19

PI DE 19612105 A1 19971002 (199745)* 6 A61B005-14 <--
WO 9735511 A1 19971002 (199745) A61B005-00 <--
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
DE 19612105 C2 19981105 (199848) A61B005-14 <--

ADT DE 19612105 A1 **DE 1996-1012105 19960327**; WO 9735511 A1 **WO 1997-EP1076 19970304**; DE 19612105 C2 **DE 1996-1012105 19960327**

PRAI **DE 1996-19612105 19960327**

REP DE 4130742; DE 4401400; EP 275390; EP 534074; WO 9510221

IC ICM **A61B005-00**; **A61B005-14**
ICS A61M001-36; **G01N033-487**

AB DE 19612105 A UPAB: 19971113
The following is claimed e.g. (A) determination of the concentration of a metabolite (such as **glucose** or lactate) in biological tissue (10; especially subcutaneous fat tissue) comprising passing a **perfusion** solution (20) through a **microdialysis** sonde (12), which is placed in the tissue (10), so that a **dialysate** stream, in which the metabolite is enriched, is obtained. The metabolite in the **dialysate** stream is oxidised, in an oxidation reaction, by oxygen, under the action of an enzyme (34; especially **glucose** oxidase or lactate oxidase). An **electrode** signal, which is dependent on the concentration of one of the reaction participants in the oxidation reaction, is measured at a measuring point (14) as a measurement of the concentration of the metabolite. The **dialysate** stream in the process is treated with oxygen.
USE- The process/apparatus may be used for long-term observation of blood sugar levels, e.g., in diabetic patients.
ADVANTAGE- The process/apparatus guarantees complete oxidation of the

metabolite, even at low temperatures and high substrate concentrations. The apparatus may be connected to an apparatus for automatic administration of insulin.
Dwg.1/1

FS CPI GMPI
FA AB; GI; DCN
MC CPI: B04-B04D5; B10-A07; B11-C08; B12-K04A; D05-A02A; J04-B01

L123 ANSWER 13 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN **1997-386496** [36] WPIX
DNN **N1997-321652** DNC **C1997-124169**
TI Integrated sample taking and **sensor** system for chemical and biochemical analysis - for chemical and biochemical analysis, has internal channel through which carrier liquid is passed covered by membrane and **sensor** elements and reference **electrodes**.
DC A89 B04 D16 J04 S03
IN KNOLL, M
PA (KNOL-I) KNOLL M
CYC 20
PI DE 19602861 A1 19970731 (199736)* 28 G01N027-404
WO 9727475 A1 19970731 (199736) GE 61 G01N027-403
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: JP US
DE 19602861 C2 19971211 (199802) 28 G01N027-404
EP 876605 A1 19981111 (199849) GE G01N027-403
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
JP 2000505194 W 20000425 (200031) 49 G01N027-28
US 6287438 B1 20010911 (200154) G01N027-26
ADT DE 19602861 A1 DE 1996-1002861 19960128; WO 9727475 A1 WO 1997-DE192 19970128; DE 19602861 C2 DE 1996-1002861 19960128; EP 876605 A1 EP 1997-914106 19970128, WO 1997-DE192 19970128; JP 2000505194 W JP 1997-526445 19970128, WO 1997-DE192 19970128; US 6287438 B1 WO 1997-DE192 19970128, US 1998-117077 19980923
FDT EP 876605 A1 Based on WO 9727475; JP 2000505194 W Based on WO 9727475; US 6287438 B1 Based on WO 9727475
PRAI DE 1996-19602861 19960128
REP DE 4408352; DE 4410224; EP 138152; EP 401179; FR 2325920; US 4413407; US 4790640; US 4865698; US 5393401; WO 9517966; WO 9522051
IC ICM G01N027-26; G01N027-28; G01N027-403; G01N027-404
ICS B01L003-00; C12Q001-00; **C12Q001-54**; C12Q001-58; G01N001-10; G01N021-05; G01N027-327; G01N033-68
AB DE 19602861 A UPAB: 19970909
Sample taking and **sensor** system comprises a support (1) with at least 2 through holes (4,5) connecting with the ends (9,10) of a channel (11) formed in a channel carrier (6). The channel (11) is covered with at least 1 membrane (12) which is tightly bonded to the channel carrier (6). A cover (13) with openings (16,17) situated over the channel (11) is tightly bonded to the membrane (12).

A carrier liquid containing the analyte is circulated through the channel (6) via the ports (4,5; 9,10) and the analyte passes through the uncovered parts of the analyte-permeable membrane (12) so that substance concentrations or ion activities of the analyte can be measured by way of electrochemical or optical **sensors** introduced into the sockets (16,17).

USE - The system is useful for chemical and biochemical analysis involving **micro-dialysis**.

ADVANTAGE - The units have a **multisensor** arrangement integrated with a throughflow channel and **micro-dialysis** element, and can be mass produced easily and cheaply.
Dwg.1,2/21

FS CPI EPI
FA AB; GI
MC CPI: A12-L04B; B04-C02A; B04-C03; B04-D02; B05-B02C; B11-C08B; B12-K04; D05-H09; J04-B01
EPI: S03-E03; S03-E13B; S03-E14H

L123 ANSWER 14 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1996-098068 [11] WPIX
DNN N1996-081900 DNC C1996-031755
TI Measurement of concentration of substance in body fluid over long time - uses **dialysis probe** with timed delivery of **dialysate** to monitor at intervals..
DC A96 B04 D16 J04 P31 P34
IN KERNER, W
PA (EPPE-N) EPPENDORF-NETHELER-HINZ GMBH; (BOEF) BOEHRINGER MANNHEIM GMBH
CYC 1
PI DE 4426694 A1 19960208 (199611)* 9 A61B005-14 <--
DE 4426694 C2 19980723 (199833) A61B005-14 <--
ADT DE 4426694 A1 **DE 1994-4426694 19940728**; DE 4426694 C2 **DE 1994-4426694 19940728**
PRAI **DE 1994-4426694 19940728**
IC ICM **A61B005-14**
ICS A61M001-00; A61M001-14; A61M025-00
AB DE 4426694 A UPAB: 19960315
The content of at least one substance in a body fluid is monitored as follows. A **perfusion** fluid is fed into the body through a **dialysis probe** in diffusion contact with the body fluid round the **probe**. The resulting **dialysate** is fed to a monitoring unit to measure the concentration of the substance. The **dialysate** is passed to the monitoring unit (22) in separate and timed measurement intervals.

Also claimed is an appts. with a pump to feed **dialysate** from the **probe** (12) to the monitor (22) in separate and timed measurement intervals.

Pref. the monitor (22) has an electro-chemical enzyme **cell** containing immobilised lactate oxidase (LOD) or **glucose** oxidase (GOD); and a membrane to limit the diffusion, made of polycarbonate or polyurethane. The measurement **electrode** has a coating of a fluoroethylene cpd., especially microporous PTFE. The **dialysis** membrane (19) is made of cellulose acetate or polycarbonate polyether copolymer.

USE - The system is used for diabetic patients, to establish the **glucose** content in blood such as over a 24 hr. period, in order to determine the therapy regime; in sports medicine, to monitor training regimes; and to determine the half-lives of medicaments.

ADVANTAGE - The method gives a significantly more stable measurement and the appts. can be standardised simply.

Dwg.1/3
FS CPI GMPI
FA AB; GI; DCN
MC CPI: A04-E10; A12-E14; A12-V02; A12-V03C2; A12-W11A; B04-B04D5; B04-C02A3; B04-C03A; B04-C03B; B05-A03B; B10-A07; B11-C08D; B12-K04A; D05-H09; J04-C03

L123 ANSWER 15 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1995-283093 [37] WPIX
DNC C1995-127740
TI Detecting lactate produced from labelled **glucose** - with deuterium and 13C substitutions, used to measure the pentose phosphate pathway in in vitro or in vivo systems.

DC B04 D16
IN KINGSLEY, P B; ROSS, B D
PA (UNMI) UNIV MICHIGAN
CYC 1
PI US 5439803 A 19950808 (199537)* 18 C12P019-02 <--
ADT US 5439803 A **CIP of US 1993-106172 19930813, US 1993-124514 19930920**
PRAI **US 1993-124514 19930920; US 1993-106172 19930813**
IC ICM C12P019-02
ICS C12Q001-48; **C12Q001-54**
AB US 5439803 A UPAB: 19950921
Labelled lactate (A), produced from **glucose** by an enzymatic system, is assayed by (i) admin. of D-(1,6-13C2,6,6-2H2) **glucose** (I) to a system; and (ii) detecting (A) produced from (I).
USE - The method is used to quantify pentose phosphate pathway (PPP) activity in an enzyme system, partic. in a **cell** culture, **cell** or tissue sample, or in a living organism (claimed) especially to measure relative amts. of glycolysis and PPP. When combined with **microdialysis**, the method can be used to monitor glycolysis and PPP (an important pathway for protecting **cells** against oxidative stress) in vivo, e.g. for screening antioxidant enzyme inhibitors and/or monitoring treatment (e.g. oxidation therapy of cancer).
ADVANTAGE - Double 13C substitution will generate, in a single incubation, labelled lactate methyl gp. derived from both 1 and 6 positions that can be differentiated by gas chromatography-mass spectrometry (GC-MS). This method avoids 14CO2 production (as in the standard method using 1-14C-**glucose** and 6-14C-**glucose**), allows repeat measurements to be done on the same set of **cells**, only involves one incubation and does not require measurement of **glucose** consumed.
Dwg.3/4
FS CPI
FA AB; GI; DCN
MC CPI: B05-A04; B10-A07; B10-C04D; B11-C07B5; B12-K04A; D05-A02; D05-H08; D05-H09

L123 ANSWER 16 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1995-255852 [34] WPIX
DNN N1995-197449 DNC C1995-116896
TI Continuous monitoring of metabolite concentration in bio tissue - uses mixture of enzyme solution with **dialysate** or **perfusate** flow, for combination with insulin infusion operation to compensate for diabetic defects.
DC B04 B07 D16 P31 P34 S03
IN PFEIFFER, E; STERNBERG, F
PA (PFEI-I) PFEIFFER E; (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE; (STER-I) STERNBERG F
CYC 6
PI DE 4401400 A1 19950720 (199534)* 9 A61B005-14 <--
EP 664989 A1 19950802 (199535) GE 11 A61B005-00 <--
R: CH DE FR LI NL
US 5640954 A 19970624 (199731)# 8 A61B005-00 <--
EP 664989 B1 20020703 (200243) GE A61B005-00 <--
R: CH DE FR LI NL
DE 59410150 G 20020808 (200259) A61B005-00 <--
ADT DE 4401400 A1 **DE 1994-4401400 19940119**; EP 664989 A1 **EP 1994-117390 19941104**; US 5640954 A **US 1995-435382 19950505**; EP 664989 B1 **EP 1994-117390 19941104**; DE 59410150 G **DE 1994-510150 19941104, EP 1994-117390 19941104**

FDT DE 59410150 G Based on EP 664989
PRAI **DE 1994-4401400 19940119; US 1995-435382 19950505**
REP DE 4130742; EP 401179; EP 409467; EP 534074; WO 8902720
IC ICM **A61B005-14**
ICS A61M001-14; C12Q001-26; C12Q001-32; **C12Q001-54**; G01N027-403; G01N033-48
AB DE 4401400 A UPAB: 19950904
For continuous monitoring of a metabolite concentration in bio tissue, such as **glucose** or lactic acid, the enzyme solution (38) containing the enzyme (84) is mixed with the **dialysate** and/or **perfusate** flow.
Also claimed is an appts. with a **dialysate** channel (14) and/or **perfusate** channel (12) subjected to a mixture flow of an enzyme solution (38) from a **reservoir** (24). The measurement system (28) has a measurement **sensor** (26) to measure the concentration of metabolites which can be oxidised through the action of the enzyme (84).
USE - The system is for use in combination with an automatic insulin infusion operation to compensate for diabetic defects in diabetic patients, to **control** the insulin delivery according to the measured **glucose** concentration in the patient's body tissue.
ADVANTAGE - The action gives an online measurement in a rapid-working, compact and easily handled system, with a high bio-compatibility.
Dwg.1/3
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: B04-B04D4; B04-J03A; B10-A07; B10-C04D; B11-C08E3; B12-K04A; B14-F07; D05-A02; D05-H09
EPI: S03-E03; S03-E14H
ABEQ US 5640954 A UPAB: 19970731
A method for continuously monitoring the concentration of a metabolite in biological tissue comprising the steps of:
implanting a **micro-dialysis probe** in subcutaneous tissue so that it contacts with lymph contained in the subcutaneous tissue;
feeding a **perfusion** liquid to the **micro-dialysis probe** whereby the **perfusion** liquid is enriched with the metabolite contained in the lymph;
removing the enriched **perfusion** liquid as a **dialysate** from the **micro-dialysis probe**;
adding an enzyme in the form of an enzyme solution continuously to the **dialysate** in an amount based on the flow rate of the **dialysate** to form a **dialysate** measurement solution;
determining the concentration of the metabolite in the **dialysate** by measuring the **dialysate** measurement solution ex vivo with an electrochemical **sensor**; and
determining the concentration of the metabolite in the biological tissue based on the concentration of the metabolite in the **dialysate**.
Dwg.1/3

L123 ANSWER 17 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1995-161515 [21] WPIX
DNN N1995-126726
TI Concentration monitoring method for selected substance in body fluid of human or animal, e.g **glucose** in blood - uses interface held in contact with body and electrochemical detector and **perfusion**

fluid is passed from interface to detector at rate of less than 60 microlitre per hour.

DC P31 S03 S05

IN KORF, J; TERWEE, T H M; TERWEE, T

PA (KORF-I) KORF J; (TERW-I) TERWEE T H M; (TERW-I) TERWEE T

CYC 19

PI WO 9510221 A2 19950420 (199521)* EN 43 A61B005-00 <--
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
W: JP US
WO 9510221 A3 19950518 (199615) A61B005-00 <--
EP 722288 A1 19960724 (199634) EN 1 A61B005-00 <--
R: CH DE ES FR GB IT LI NL SE
EP 722288 B1 19970723 (199734) EN 26 A61B005-00 <--
R: CH DE ES FR GB IT LI NL SE
DE 69404472 E 19970904 (199741) A61B005-00 <--
US 6013029 A 20000111 (200010) A61B005-00 <--
EP 722288 B2 20060118 (200607) EN A61B005-00 <--
R: CH DE ES FR GB IT LI NL SE

ADT WO 9510221 A2 **WO 1994-NL248 19941010**; WO 9510221 A3 **WO 1994-NL248 19941010**; EP 722288 A1 **WO 1994-NL248 19941010, EP 1995-901627 19941010**; EP 722288 B1 **WO 1994-NL248 19941010, EP 1995-901627 19941010**; DE 69404472 E **DE 1994-604472 19941010, WO 1994-NL248 19941010, EP 1995-901627 19941010**; US 6013029 A **WO 1994-NL248 19941010, US 1996-624586 19960606**; EP 722288 B2 **WO 1994-NL248 19941010, EP 1995-901627 19941010**

FDT EP 722288 A1 Based on WO 9510221; EP 722288 B1 Based on WO 9510221; DE 69404472 E Based on EP 722288, Based on WO 9510221; US 6013029 A Based on WO 9510221; EP 722288 B2 Based on WO 9510221

PRAI **GB 1993-20850 19931009**

REP No-SR.Pub; 3.Jnl.Ref; EP 275390; EP 401179; US 4832034

IC ICM **A61B005-00**
ICS G01N027-28

AB WO 9510221 A UPAB: 19950602
The method involves transferring the substance or group of substances to be monitored from the body (1) through an interface (2) for transportation away from behind the interface in a **perfusion** fluid flow. The concentration of the substances to be monitored, in the **perfusion** fluid flow is measured downstream from the interface.

The detector has an amperometric electrochemical detector, e.g. with noble metal **electrode**, pref platinum@ and silver@-silver halide reference **electrode**.

USE/ADVANTAGE - Monitoring of **glucose** concentration in blood in patient. The lowered flow rate allows for a more compact construction. Due to the low flow rate, a very constant flow can be maintained for a long period with a simple device which needs no or very little supply of energy. Does not require special surgery.

Dwg.1/13

FS EPI GMPI

FA AB; GI

MC EPI: S03-E03; S03-E14H1; S05-D01G

ABEQ EP 722288 B UPAB: 19970820
A method for monitoring the concentration of a selected substance or group of substances in a body fluid of a living or animal body (1), in which the substance or group of substances to be monitored is transferred from the body (1) through an interface (2) and transported away from behind the interface (2) in a **perfusion** fluid flow, and in which the concentration of the substance or group of substances to be monitored in said **perfusion** fluid flow is measured downstream from the interface, characterised in that the flow rate of the **perfusion**

fluid flow is less than 60 mul/hour.
Dwg.1/13

L123 ANSWER 18 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1994-280875 [35] WPIX
DNN N1994-221408 DNC C1994-128108
TI Body tissue fluid concentrate monitor, for treatment of diabetes - has **dialysis probe** implanted in the tissue with a short tube connection to the pump and enzyme **cell**, etc..
DC B04 J04 P31 P34 Q56 S03 S05 W05
IN BOCKMAIR, M; KRUEGER, M; MEYERHOFF, C; PFEIFFER, E F
PA (DAIM) DEUT AEROSPACE AG; (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE; (PFEI-I) PFEIFFER E F; (DAIM) DAIMLER-BENZ AEROSPACE AG
CYC 1
PI DE 4405149 A1 19940908 (199435)* 6 A61B005-14 <--
DE 4405149 C2 19981126 (199851) A61B005-14 <--
ADT DE 4405149 A1 **DE 1994-4405149 19940218**; DE 4405149 C2 **DE 1994-4405149 19940218**
PRAI **DE 1993-4305834 19930225**
IC ICM **A61B005-14**
ICS A61M001-14; A61M001-16; F04B043-02; **G01N033-487**; G08B019-00
AB DE 4405149 A UPAB: 19941021
The appts., to determine the concentration of a substance in body fluids, such as **glucose**, has a **dialysis probe** implanted in the body tissue with a **perfusion** solution flowing through, together with a pump and an enzyme **cell sensor** and a vessel to catch the returned solution. The **sensor** unit (2), in its own housing separate from the evaluation/display (3, 4), incorporates the **perfusion** solution vessel (21), pump (22), enzyme **cell** (23) and the catch vessel (24). Or the **dialysis probe** (1), **perfusion** solution vessel (21), pump (22), enzyme **cell** (23) and the catch vessel (24) are contained in a second housing as a **probe/sensor** unit.

The **sensor** unit (2), outside the body, is placed as close as possible to the **dialysis probe** (1), to keep the tube connections (12, 14) short for the flow of **perfusion** solution between the **probe** (1) and **sensor** (2). The pump (22) is a micro-mechanical pump, and pref. a micro-membrane pump, fitted with at least one pressure or flow **sensor**.A number of enzyme **cells**, according to different fluid content types, are switched in series or parallel, with the outputs linked to the evaluation/display unit (3, 4). The evaluation/display unit (3, 4) and/or the display/alarm unit (4) each have a memory to store the measurements, pref. a FIFO memory.

USE - The appts. is especially for the treatment of diabetes, to monitor and display the **glucose** content in body tissue fluids, such as after the administration of insulin.

ADVANTAGE - The elements of the assembly outside the body are structured to give the shortest possible tube connections, and high comfort in use.

Dwg.1/1
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: B04-J03A; B04-L01; B05-A01B; B05-B02C; B10-A07; **B11-C08D3**; B12-K04A; B14-S04; J04-B01
EPI: S03-E14H6; S05-C09; W05-A05A; W05-D04A5

L123 ANSWER 19 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1994-147006 [18] WPIX
DNC C1994-067154

TI Measuring micro amount component - by **dialysing** measuring component in **perfusion** solution, which is extruded by injection pump into **probe** etc..
DC B04 D16
PA (NIKK-N) NIKKISO CO LTD
CYC 1
PI JP 06090791 A 19940405 (199418)* 8 C12Q001-00 <--
JP 07047000 B2 19950524 (199525) 9 C12Q001-00 <--
ADT JP 06090791 A **JP 1992-244994 19920914**; JP 07047000 B2 **JP 1992-244994 19920914**
FDT JP 07047000 B2 Based on JP 06090791
PRAI **JP 1992-244994 19920914**
IC ICS C12M001-34; **C12Q001-54**
ICA C12Q001-26
AB JP 06090791 A UPAB: 19940622
Measuring using injection pump that uses gas pressure produced by chemical reaction as driving source, **perfusion** solution is extruded. The extruded solution is received in **dialysing probe**, further, measuring micro amount component is **dialysed** to incorporate into the **perfusion** solution to prepare the micro amount component containing **perfusion** solution Then micro amount of component containing in send out **perfusion** solution is measured by enzyme **sensor** flow **cell**. Where the micro amount component is **glucose**.
The appts. is composed of injection pump, **dialysing probe** and enzyme **sensor** flow **cell**. Where the micro amount component is **glucose**.
The appts. is composed of injection pump, **dialysing probe** and enzyme **sensor** flow **cell**.
USE/ADVANTAGE - Variation of output by temperature dependency can be decreased. Driving material, electronic source etc. at pump is unnecessary. Micro amount component can be measured simply, continuously and accurately by small appts. Contamination with protein does not occur.
Dwg.0/7
FS CPI
FA AB; DCN
MC CPI: B07-A02; B11-C08; B12-K04; D05-A02

L123 ANSWER 20 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1993-094978 [15] WPIX
DNN N1993-072606 DNC C1993-041957
TI Device for determining the concentration of substances in body liquids - comprises **dialysis probe** implanted in body tissue from which a **dialysate** stream is obtd. is mixed with buffer and measured extracorporeally.
DC B04 D16 P31 P34 S03 S05
IN KECK, F S; KERNER, W; MEYERHOFF, C; PFEIFFER, E F; ZIER, H
PA (DIAB-N) INST DIABETESTECHNOLOGIE GEMEINNUETZIGE
CYC 9
PI DE 4130742 A1 19930318 (199312)* A61B005-14 <--
EP 534074 A1 19930331 (199313) GE 8 A61B005-00 <--
R: AT CH DE FR GB IT LI NL SE
EP 534074 B1 19960306 (199614) GE 9 A61B005-00 <--
R: AT CH DE FR GB IT LI NL SE
DE 59205559 G 19960411 (199620) A61B005-00 <--
ADT DE 4130742 A1 **DE 1991-4130742 19910916**; EP 534074 A1 **EP 1992-112048 19920715**; EP 534074 B1 **EP 1992-112048 19920715**; DE 59205559 G **DE 1992-505559 19920715, EP 1992-112048 19920715**
FDT DE 59205559 G Based on EP 534074

PRAI **DE 1991-4130742 19910916**
REP EP 104935; EP 275390; EP 401179; EP 403394
IC ICM **A61B005-14**
ICS A61M001-14; C12Q001-26; C12Q001-32; G01N027-327; G01N033-48
AB DE 4130742 A UPAB: 19931122
A process for the determination of the contents (I) (e.g. **glucose**, lactic acid) in tissue fluids using a **dialysis** sonde (10) which can be implanted in body tissue and which can be charged with a continuous **perfusate** stream forming a **dialysate** stream enriched with (I) which is led to a pref. extracorporal measuring device comprises mixing the **dialysate** stream with an amount of buffer proportional to the **perfusate** amount in the direction of flow prior to the measuring device, and continuously passing the **dialysate** to be measured to an electrochemical **cell** (22) in the measuring device.
USE/ADVANTAGE - The process enables the contents (I) to be determined
Dwg.0/0
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: B04-B02C2; B10-A07; B10-C04D; B11-C08E3; D05-A01B1; D05-H09
EPI: S03-E14H6; S05-C09; S05-D01G; S05-H
ABEQ EP 534074 B UPAB: 19960405
A process for determining the concentration of constituents, such as **glucose** or lactic acid, in tissue fluid, in which a **dialysate** stream enriched with the constituents is formed by means of a **dialysis probe** (10), which can be supplied with a continuous **perfusate** stream and can be implanted in body tissue, and is passed into a preferably extracorporeally located measuring arrangement characterised in that the **dialysate** stream is mixed with a buffer stream proportional to the **perfusate** stream in the direction of flow before the measuring arrangement, that an electrochemical enzyme **cell** (22) located in the measuring arrangement is continuously supplied with the measuring **dialysate** formed in this way, and that the **perfusate** stream and the buffer stream are drawn by suction from a common liquid **reservoir** (16).
Dwg.1/3

L123 ANSWER 21 OF 21 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 1990-363660 [49] WPIX
DNN N1990-277473 DNC C1990-158032
TI Blood **glucose** continuous determn. device - has **micro-dialysing** needle with semi-permeable plastic cover inserted into vein.
DC B04 D16 P31 P32 P34 S03 S05
IN BERNARDI, L
PA (AMPL-N) AMPLIFON SPA; (AMPL-N) AMPLISCIENTIFICA SR; (AMPL-N) AMPLISCIENTIFICA SRL
CYC 5
PI EP 401179 A 19901205 (199049)* EN 12 <--
R: FR GB
IT 1231916 B 19920115 (199238) A61B000-00 <--
US 5176632 A 19930105 (199304) 10 A61M031-00 <--
US 5298022 A 19940329 (199412) 10 A61M031-00 <--
EP 401179 B1 19960306 (199614) EN 14 A61B005-00 <--
R: DE FR GB
DE 69025646 E 19960411 (199620) A61B005-00 <--
ADT EP 401179 A **EP 1990-830238 19900528**; IT 1231916 B **IT 1989-48005 19890529**; US 5176632 A **US 1990-527129 19900522**; US 5298022 A **CIP of US 1990-527129 19900522, US 1993-238 19930104**; EP 401179 B1 **EP 1990-830238 19900528**; DE 69025646

E **DE 1990-625646 19900528, EP 1990-830238 19900528**
FDT US 5298022 A CIP of US 5176632; DE 69025646 E Based on EP 401179
PRAI **IT 1989-48005 19890529**
REP 1.Jnl.Ref; EP 134758; EP 206531; US 4245634; US 4253456; 01Jnl.Ref
IC ICM A61B000-00; **A61B005-00**; A61M031-00
ICS A61F002-02
AB EP 401179 A UPAB: 19971021
A device for continuous determn. of blood **glucose** in a diabetic patient over 24-36 h. comprises a pump (8) for injecting heparin saline solution from a container (2) through a **micro-dialysing** needle (4) inserted into a vein. The needle has a semipermeable plastic hollow fibre on its outer surface passing only low mol. weight substances of below 100000 daltons to give proportional equilibrium of **glucose** concentration on both sides.

The needle has an outgoing conduit to a **sensor** with a Pt-Ag **electrode** and an enzyme membrane containing **glucose** oxidase producing **gluconic** acid and H2O2, the latter decomposing with liberation of two electrons so that measurement of current indicates **glucose** concentration The concentration data may be transmitted to a computer and used to **control** injection of insulin and/or **glucose** at 1 min. intervals. A device for measuring blood lactate in an athlete or heart patient is also claimed, using a lactate oxidase containing membrane.

ADVANTAGE - Is of small size and can be worn by a patient while continuing normal activities.

Dwg.1/4
FS CPI EPI GMPI
FA AB; GI; DCN
MC CPI: B04-B02C2; B04-B04D5; B04-C02E; B10-A07; B10-C04D; B11-C08B; B12-K04A; D05-A01A; D05-A01B1
EPI: S03-E03C; S05-D01X; S05-H
ABEQ US 5176632 A UPAB: 19930928
Device for the continuous monitoring of blood **glucose** levels over a period of 24-36 hrs. comprises a container with a saline soln. contg. heparin which is administered through a **microdialyser** unit having a needle mounted into the vein of a diabetic patient; the saline soln. is pumped to the **microdialyser** in which a semipermeable plastic hollow fibre membrane allows **dialysis** between the soln. and the patient's blood, so that only small mols. (Mr less than 100,000) can pass; an adjacent Pt-Ag **electrode** with an enzyme membrane contg. **glucose** oxidase facilitates the oxidn. of **glucose** to **gluconic** acid and H2O2, which is then decomposed by electron transfer, and the current flowing is a measure of the **glucose** level. The data is recorded with a computer, which is programmed to initiate the injection of insulin when the **glucose** level becomes critical. The **dialysed** saline soln. contains **glucose** (about 1/10-th of the blood content) and is discarded.

Similarly, the lactate levels in heart patients and athletes can be monitored, using a **sensor** with a membrane contg. lactase oxidase.

USE - Prods. facilitate automatic and continuous medical care for diabetics and heart patients.

2/4
ABEQ US 5298022 A UPAB: 19940510
Glucose is determined continuously and quantitatively in the blood over 24-36 hr. A) using a **reservoir** contg. a heparin contg. saline soln. and pumping means to pump the soln. through a **microdialysing** needle provided with a semi permeable plastic hollow fibre membrane on its outer surface allowing **dialysis** to occur between blood in a vein and the soln. and with only **glucose**

and other substances of mol. wt. below 10)5) daltons able to pass through the fibre membrane by B) inserting the needle into a vein of a patient and the concentration of **glucose** and other substances reaches an equilibrium proportional to the actual concentration of **glucose** in the blood in the saline soln. with C) passing the **glucose** contg. saline soln. through an outgoing conduit of the needle to a **sensor** provided with a Pt/Ag **electrode** and an enzymatic membrane contg. **glucose** oxidase, which oxidises the **glucose** to **gluconic** acid and H2O2, which latter is decomposed with liberation of 2 electrons causing an electric current to flow, whose measurement provides an indication of the amount of **glucose** in the blood. The **dialysed** blood is not recirculated. The **glucose** contg. saline soln. contains 0.5-0.05 of the **glucose** concentration in the blood. The lactate content in blood can be determined analogously.

USE/ADVANTAGE - To detect **glucose** in the blood of a diabetic and lactate in the blood of an athlete or heart patient. **Glucose** and other substances can be readily determined without deposition of platelets and fibrin.

Dwg.0/0

ABEQ EP 401179 B UPAB: 19960405

A device for the continuous quantitative determination of **glucose** in the blood of a diabetic patient over a period of 24-36 hours, comprising: a container (2) for a heparin-containing solution; a **micro-dialysing** assembly including; (i) a vein catheter (38); (ii) a stylet (40) removably mounted within said catheter (38) for inserting the catheter (38) into a vein of the diabetic patient; (iii) a **microdialysing** needle (4) comprising a semipermeable hollow fibre membrane (16) on a tip portion thereof; pumping means (8) for feeding said solution to said **microdialysing** needle (4); a **glucose** **sensor** (6), in fluid communication with said **microdialysing** needle (4), comprising platinum (27) and silver (28) **electrodes** and an enzymatic membrane (25) containing **glucose** oxidase; said **microdialysing** needle (4) being insertable in a liquid-tight manner into said catheter (38) in place of said stylet (40), whereby said semipermeable hollow the membrane (16) protrudes beyond the tip of the catheter (38) into the blood stream flowing in the vein of the patient.

Dwg.1/6

=> d his

(FILE 'REGISTRY' ENTERED AT 07:34:32 ON 30 MAY 2006)
DEL HIS
L1 3 S (D-GLUCOSE OR L-GLUCOSE OR DL-GLUCOSE OR GLUCOSE)/CN

FILE 'HCAPLUS' ENTERED AT 07:36:01 ON 30 MAY 2006
L2 189695 S L1
L3 15559 S L1 (L) (ANST OR ANT OR ARU)/RL
E DIAGNOS/CT
E E4+ALL
L4 77057 S E2
E E5+ALL
L5 25236 S E1,E2
E E20+ALL
L6 1192 S E1,E2
E E12+ALL
L7 63217 S E1,E4,E5
E DIAGNOS/CT

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L8          7139 S E7,E8,E19
                 E E22+ALL
L9          4562 S E2
L10         2499 S L2 AND L4-L9
L11          525 S L3 AND L4-L9
L12        17533 S L3,L10,L11
L13       172162 S L2 NOT L12
                 E PROBE/CT
                 E E11+ALL
L14          745 S E2
                 E MICRODIALYSIS/CT
                 E E3+ALL
L15         1420 S E2
L16           36 S E4
L17         2798 S (MICRODIALY? OR MICRO(L)DIALY?)(L)PROBE
L18          171 S L12 AND L14-L17
L19          112 S L13 AND L14-L17
L20          283 S L18,L19
L21          474 S L12 AND PROBE
L22         1055 S L13 AND PROBE
L23         1634 S L20-L22
L24           89 S L23 AND (DIALYZATE OR DIALYSATE)
                 E DIALYSIS/CT
L25         1690 S E8,E9
                 E E3+ALL
L26         2021 S E5(L)MICRO?
L27          695 S L25,L26 AND PROBE
L28          231 S L27 AND (DIALYZATE OR DIALYSATE)
L29          286 S L24,L28
L30         2244 S L23,L27
L31         2244 S L29-L30
L32          341 S L31 AND PERFUS?
L33          166 S L12,L13 AND (MICRODIALYSIS OR MICRO DIALYSIS)(L)PROBE
L34           59 S L33 AND (DIALYZATE OR DIALYSATE)
L35           55 S L33 AND PERFUS?
L36          341 S L32,L35
L37         2244 S L31,L33
L38         1903 S L31-L37 NOT L36
                 E HOSS/AU
L39           12 S E66,E67
                 E PFLEIDERER/AU
L40           67 S E24-E28,E33-E35
                 E GESSLER/AU
L41            6 S E57,E58
                 E ZIETEN/AU
                 E FUSSGAENGER/AU
L42            8 S E15-E18
                 E FUESSGAENGER/AU
                 E FEUSSGAENGER/AU
L43            0 S (US20040191848 OR US6852500)/PN OR (US2004-782290# OR US2000-
L44           12 S L39-L42 AND L2,L3
                 SEL DN AN 3 11 12
L45            9 S L44 NOT E1-E9
L46          826 S L2,L3 AND ROCHE?/PA,CS
L47            9 S L46 AND L38
L48            4 S L46 AND L36
L49           13 S L47,L48
L50            5 S L49 AND ROCHE DIAGN?/PA,CS
L51           14 S L45,L50
L52          194 S L36 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
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L53        1110 S L38 AND (PY<=1999 OR PRY<=1999 OR AY<=1999)
L54         210 S L36 AND (PY<=2000 OR PRY<=2000 OR AY<=2000)
L55        1225 S L38 AND (PY<=2000 OR PRY<=2000 OR AY<=2000)
L56        1435 S L52-L55
L57           0 S L56 AND (MICROCONTROL? OR MICRO CONTROL?)
L58          11 S L56 AND CONTROL?(L)DEVICE
                SEL DN AN 3 4 6 8 9 10 11
L59           7 S L58 AND E10-E30
L60         261 S L56 AND FLOW?
L61          44 S L60 AND CELL
L62          53 S L60 AND ?SENSOR?
L63          77 S L61,L62
L64          27 S L63 NOT (BIOCHEM?(L)METHOD?)/SC
                SEL DN AN 13 16 23 27
L65           4 S L64 AND E31-E42
L66          50 S L63 NOT L64
L67          42 S L66 AND ?GLUCOSE?
L68           8 S L66 NOT L67
L69          27 S L67 AND ENZYM?/SC,SX,CW,CT,BI
L70          20 S L67 AND OXIDASE
L71          29 S L69,L70
L72          13 S L67 NOT L71
                SEL DN AN 2 9 10
L73          10 S L72 NOT E43-E51
L74           9 S L71 NOT OXIDASE
L75          20 S L71 NOT L74
                SEL DN AN 4 5 10 11 18
L76           9 S L74 NOT E52-E66
L77          40 S L51,L59,L65,L73,L74,L76
L78          40 S L77 AND L2-L77
L79          27 S L78 AND (MICRO? OR MINI?)
L80          30 S L78 AND ?DIALY?
L81          39 S L78 AND ?GLUCOS?
L82           1 S L78 NOT L81
L83          27 S L79 AND L80-L82
L84          13 S L78 NOT L83
L85          40 S L78-L84
L86           9 S L85 AND L39-L42
L87           2 S L84 AND ROCHE DIAG?/PA,CS
L88          10 S L86,L87
L89          30 S L85 NOT L88

     FILE 'REGISTRY' ENTERED AT 08:13:01 ON 30 MAY 2006

     FILE 'HCAPLUS' ENTERED AT 08:13:11 ON 30 MAY 2006

     FILE 'WPIX' ENTERED AT 08:14:14 ON 30 MAY 2006
L90           1 S L43
                E A61B005/IC,ICM,ICS
L91       63048 S A61B005/IPC,IC,ICM,ICS,ICA,ICI
L92         988 S C12Q001-54/IPC,IC,ICM,ICS,ICA,ICI
L93        1113 S G01N033-66/IPC,IC,ICM,ICS,ICA,ICI
L94        1078 S G01N033-487/IPC,IC,ICM,ICS,ICA,ICI
L95        3051 S L91-L94 AND GLUCOSE
                E GLUCOSE/CN
L96           3 S E3,E18,E19
L97       12477 S (R00038 OR R07877)/DCN OR 0038/DRN OR (159573-0-0-0 OR 159573
L98        1961 S L91-L94 AND L97
L99        3218 S L95,L98
L100         18 S L99 AND (MICRODIALY? OR MICRO DIALY?)
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L101          11 S L99 AND (B11-C08D3 OR C11-D08D3)/MC
L102          27 S L100,L101,L90
L103         151 S L99 AND PROBE
L104          12 S L103 AND ?DIALY?
L105          32 S L102,L104
L106          18 S L105 AND PY<=2000
L107          25 S L105 AND PRY<=2000
L108          25 S L105 AND AY<=2000
L109          10 S L92,L93 AND (MICRODIALY? OR MICRO DIALY?)
L110          10 S L92,L93 AND (B11-C08D3 OR C11-D08D3)/MC
L111           6 S L92,L93 AND PROBE AND ?DIALY?
L112           4 S L109-L111 NOT L105
                 SEL AN DN 3
L113           1 S L112 AND E1-E3
L114          26 S L106-L108,L113
L115           7 S L105 NOT L114
                 SEL L114 AN DN 4 10 22 25 26
L116          21 S L114 NOT E4-E18
L117          21 S L90,L116
L118           4 S L117 AND ROCHE?/PA,CS
L119           4 S L117 AND (FUSSGAENGER ? OR GESSLER ? OR HOSS ? OR PFLEIDERER
L120          21 S L117-L119
L121          21 S L120 AND (PERFUS? OR PROBE OR ?DIALY? OR CELL OR ?CONTROL? OR
L122          20 S L121 AND ?GLUCO?
L123          21 S L121,L122

     FILE 'WPIX' ENTERED AT 08:43:53 ON 30 MAY 2006

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